Global Trends 2025:
A Transformed World

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We prepared ***Global Trends 2025: A Transformed World*** to stimulate strategic thinking about the future by identifying key trends, the factors that drive them, where they seem to be headed, and how they might interact. It uses scenarios to illustrate some of the many ways in which the drivers examined in the study (e.g., globalization, demography, the rise of new powers, the decay of international institutions, climate change, and the geopolitics of energy) may interact to generate challenges and opportunities for future decisionmakers. The study as a whole is more a description of the factors likely to shape events than a prediction of what will actually happen.

By examining a small number of variables that we judge probably will have a disproportionate influence on future events and possibilities, the study seeks to help readers to recognize signposts indicating where events are headed and to identify opportunities for policy intervention to change or lock in the trajectories of specific developments. Among the messages we hope to convey are: "If you like where events seem to be headed, you may want to take timely action to preserve their positive trajectory. If you do not like where they appear to be going, you will have to develop and implement policies to change their trajectory." For example, the report's examination of the transition out of dependence on fossil fuels illustrates how different trajectories will entail different consequences for specific countries. An even more important message is that leadership matters, no trends are immutable, and that timely and well-informed intervention can decrease the likelihood and severity of negative developments and increase the likelihood of positive ones.

Global Trends 2025 is the fourth installment in the National Intelligence Council-led effort to identify key drivers and developments likely to shape world events a decade or more in the future. Both the product and the process used to produce it benefited from lessons learned in previous iterations. Each edition of ***Global Trends*** has tapped larger and more diverse communities of experts. Our first effort, which looked out to 2010, relied primarily on expertise within the US Intelligence Community. There was some outreach to other elements of the United States Government and the American academic community. For ***Global Trends 2015***, we engaged more numerous and more varied groups of non-US Government experts, most of whom were American citizens.

For the third iteration, ***Global Trends*** **2020,** we greatly expanded the participation of non-American specialists by convening six seminars on five continents. We also increased the number and varied the format of meetings in the United States. These sessions enhanced our understanding of both specific trends and drivers and the ways these factors were perceived by experts in different regions of the world.

Each past iteration produced an even more interesting and influential report. Indeed, the worldwide response to ***Global Trends 2020*** was extraordinary. The report has been translated into several languages, debated in government offices, discussed in university courses, and used as a point of departure in community meetings on international affairs. The report was closely read and constructively criticized by myriad experts and members of the public.

Seeking to capitalize on the interest generated by previous reports and to capture even wider circles of expertise, we modified our processes yet again to produce ***Global Trends 2025***. In addition to increasing still more the participation of non-USG experts from the United States and abroad to develop the framework for the current study, we shared several drafts with participants via the Internet and a series of discussion sessions across the US and in several other countries. This iteration of ***Global Trends*** is the most collaborative yet produced; that collaboration has made it a better product and we are extremely grateful for the time and intellectual energy that literally hundreds of people have devoted to this effort.

As was the case with our previous looks at global trends that will shape the future, the process and spin-off benefits of preparing ***Global Trends 2025*** were as important as the final product. The ideas generated and insights gained during the preparation of the accompanying report have enriched the work of countless analysts and been incorporated into numerous analytic products published by the National Intelligence Council and other Intelligence Community agencies. Anecdotal evidence indicates they have also influenced the thinking and work of many participants in the process who do not work for the United States Government. We are pleased by and proud of these ancillary benefits and look forward to reaping many more when others have a chance to read and react to this edition of ***Global Trends***.

Many people contributed to the preparation of ***Global Trends 2025***, but no one contributed more than did Mathew Burrows. His intellectual gifts and managerial abilities were critical to the production of this report and everyone involved owes him a huge debt of gratitude. Mat's own note of appreciation on the following page lists others who made especially noteworthy contributions. Many others also made important contributions. We could not have produced this edition of ***Global Trends*** without the support of everyone who participated and we are deeply grateful for the partnerships and the friendships that facilitated and resulted from this collaborative effort.

C. Thomas Fingar
Chairman, National Intelligence Council

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The 2025 Global Landscape

Relative Certainties	Likely Impact
A global multipolar system is emerging with the rise of China, India, and others. The relative power of nonstate actors—businesses, tribes, religious organizations, and even criminal networks—also will increase.	By 2025 a single "international community" composed of nation-states will no longer exist. Power will be more dispersed with the newer players bringing new rules of the game while risks will increase that the traditional Western alliances will weaken. Rather than emulating Western models of political and economic development, more countries may be attracted to China's alternative development model.
The unprecedented shift in relative wealth and economic power roughly from West to East now under way will continue.	As some countries become more invested in their economic well-being, incentives toward geopolitical stability could increase. However, the transfer is strengthening states like Russia that want to challenge the Western order.
The United States will remain the single most powerful country but will be less dominant.	Shrinking economic and military capabilities may force the US into a difficult set of tradeoffs between domestic versus foreign policy priorities.
Continued economic growth—coupled with 1.2 billion more people by 2025—will put pressure on energy, food, and water resources.	The pace of technological innovation will be key to outcomes during this period. All current technologies are inadequate for replacing traditional energy architecture on the scale needed.
The number of countries with youthful populations in the "arc of instability"[1] will decrease, but the populations of several youth-bulge states are projected to remain on rapid growth trajectories.	Unless employment conditions change dramatically in parlous youth-bulge states such as Afghanistan, Nigeria, Pakistan, and Yemen, these countries will remain ripe for continued instability and state failure.
The potential for conflict will increase owing to rapid changes in parts of the greater Middle East and the spread of lethal capabilities.	The need for the US to act as regional balancer in the Middle East will increase, although other outside powers—Russia, China and India—will play greater roles than today.
Terrorism is unlikely to disappear by 2025, but its appeal could lessen if economic growth continues in the Middle East and youth unemployment is reduced. For those terrorists that are active the diffusion of technologies will put dangerous capabilities within their reach.	Opportunities for mass-casualty terrorist attacks using chemical, biological, or less likely, nuclear weapons will increase as technology diffuses and nuclear power (and possibly weapons) programs expand. The practical and psychological consequences of such attacks will intensify in an increasingly globalized world.

[1] Countries with youthful age structures and rapidly growing populations mark a crescent or "arc of instability" stretching from the Andean region of Latin America across Sub-Saharan Africa, the Middle East and the Caucasus, and through the northern parts of South Asia.

Key Uncertainties	Potential Consequences
Whether an energy transition away from oil and gas—supported by improved energy storage, biofuels, and clean coal—is completed during the 2025 time frame.	With high oil and gas prices, major exporters such as Russia and Iran will substantially augment their levels of national power, with Russia's GDP potentially approaching that of the UK and France. A sustained plunge in prices, perhaps underpinned by a fundamental switch to new energy sources, could trigger a long-term decline for producers as global and regional players.
How quickly climate change occurs and the locations where its impact is most pronounced.	Climate change is likely to exacerbate resource scarcities, particularly water scarcities.
Whether mercantilism stages a comeback and global markets recede.	Descending into a world of resource nationalism increases the risk of great power confrontations.
Whether advances toward democracy occur in China and Russia.	Political pluralism seems less likely in Russia in the absence of economic diversification. A growing middle class increases the chances of political liberalization and potentially greater nationalism in China.
Whether regional fears about a nuclear-armed Iran trigger an arms race and greater militarization.	Episodes of low-intensity conflict and terrorism taking place under a nuclear umbrella could lead to an unintended escalation and broader conflict.
Whether the greater Middle East becomes more stable, especially whether Iraq stabilizes, and whether the Arab-Israeli conflict is resolved peacefully.	Turbulence is likely to increase under most scenarios. Revival of economic growth, a more prosperous Iraq, and resolution of the Israeli-Palestinian dispute could engender some stability as the region deals with a strengthening Iran and global transition away from oil and gas.
Whether Europe and Japan overcome economic and social challenges caused or compounded by demography.	Successful integration of Muslim minorities in Europe could expand the size of the productive work forces and avert social crisis. Lack of efforts by Europe and Japan to mitigate demographic challenges could lead to long-term declines.
Whether global powers work with multilateral institutions to adapt their structure and performance to the transformed geopolitical landscape.	Emerging powers show ambivalence toward global institutions like the UN and IMF, but this could change as they become bigger players on the global stage. Asian integration could lead to more powerful regional institutions. NATO faces stiff challenges in meeting growing out-of-area responsibilities with declining European military capabilities. Traditional alliances will weaken.

Executive Summary

The **international system**—as constructed following the Second World War—will be almost unrecognizable by 2025 owing to the rise of emerging powers, a globalizing economy, an historic transfer of relative wealth and economic power from West to East, and the growing influence of nonstate actors. By 2025, the international system will be a **global multipolar one** with gaps in national power[2] continuing to narrow between developed and developing countries. Concurrent with the shift in power among nation-states, the relative power of various nonstate actors—including businesses, tribes, religious organizations, and criminal networks—is increasing. The players are changing, but so too are the scope and breadth of transnational issues important for continued global prosperity. Aging populations in the developed world; growing energy, food, and water constraints; and worries about climate change will limit and diminish what will still be an historically unprecedented age of prosperity.

Historically, emerging multipolar systems have been more unstable than bipolar or unipolar ones. Despite the recent financial volatility—which could end up accelerating many ongoing trends—we do not believe that we are headed toward a complete breakdown of the international system, as occurred in 1914-1918 when an earlier phase of globalization came to a halt. However, the next 20 years of transition to a new system are fraught with risks. Strategic rivalries are most likely to revolve around trade, investments, and technological innovation and acquisition, but we cannot rule out a 19th century-like scenario of arms races, territorial expansion, and military rivalries.

This is a story with **no clear outcome,** as illustrated by a series of vignettes we use to map out divergent futures. Although the United States is likely to remain the single most powerful actor, the United States' relative strength—even in the military realm—will decline and US leverage will become more constrained. At the same time, the extent to which other actors—both state and nonstate—will be willing or able to shoulder increased burdens is unclear. Policymakers and publics will have to cope with a growing demand for multilateral cooperation when the international system will be stressed by the incomplete transition from the old to a still-forming new order.

Economic Growth Fueling Rise of Emerging Players

In terms of size, speed, and directional flow, the transfer of **global wealth and economic power** now under way—roughly from West to East—is without precedent in modern history. This shift derives from two sources. First, increases in oil and commodity prices have generated windfall profits for the Gulf states and Russia. Second, lower costs combined with government policies have shifted the locus of manufacturing and some service industries to Asia.

Growth projections for Brazil, Russia, India, and China (the BRICs) indicate they will collectively match the original G-7's share of global GDP by 2040-2050. **China** is poised to have more impact on the world over the next 20 years than any other country. If current trends persist, by 2025 China will have the world's second largest economy and will be a leading

[2] National power scores, computed by the International Futures computer model, are the product of an index combining the weighted factors of GDP, defense spending, population, and technology.

military power. It also could be the largest importer of natural resources and the biggest polluter. **India** probably will continue to enjoy relatively rapid economic growth and will strive for a multipolar world in which New Delhi is one of the poles. China and India must decide the extent to which they are willing and capable of playing increasing global roles and how each will relate to the other. **Russia** has the potential to be richer, more powerful, and more self-assured in 2025 if it invests in human capital, expands and diversifies its economy, and integrates with global markets. On the other hand, Russia could experience a significant decline if it fails to take these steps and oil and gas prices remain in the $50-70 per barrel range. No other countries are projected to rise to the level of China, India, or Russia, and none is likely to match their individual global clout. We expect, however, to see the political and economic power of other countries—such as Indonesia, Iran, and Turkey—increase.

For the most part, China, India, and Russia are not following the Western liberal model for self-development but instead are using a different model, "**state capitalism**." State capitalism is a loose term used to describe a system of economic management that gives a prominent role to the state. Other rising powers—South Korea, Taiwan, and Singapore—also used state capitalism to develop their economies. However, the impact of Russia, and particularly China, following this path is potentially much greater owing to their size and approach to "democratization." We remain optimistic about the *long-term* prospects for **greater democratization**, even though advances are likely to be slow and globalization is subjecting many recently democratized countries to increasing social and economic pressures with the potential to undermine liberal institutions.

Many other countries will fall further behind economically. **Sub-Saharan Africa** will remain the region most vulnerable to economic disruption, population stresses, civil conflict, and political instability. Despite increased global demand for commodities for which Sub-Saharan Africa will be a major supplier, local populations are unlikely to experience significant economic gain. Windfall profits arising from sustained increases in commodity prices might further entrench corrupt or otherwise ill-equipped governments in several regions, diminishing the prospects for democratic and market-based reforms. Although many of **Latin America's** major countries will have become middle income powers by 2025, others, particularly those such as Venezuela and Bolivia that have embraced populist policies for a protracted period, will lag behind—and some, such as Haiti, will have become even poorer and less governable. Overall, Latin America will continue to lag behind Asia and other fast-growing areas in terms of economic competitiveness.

Asia, Africa, and Latin America will account for virtually all **population growth** over the next 20 years; less than 3 percent of the growth will occur in the West. Europe and Japan will continue to far outdistance the emerging powers of China and India in per capita wealth, but they will struggle to maintain robust growth rates because the size of their working-age populations will decrease. The US will be a partial exception to the aging of populations in the developed world because it will experience higher birth rates and more immigration. The number of migrants seeking to move from disadvantaged to relatively privileged countries is likely to increase.

The number of countries with youthful age structures in the current "arc of instability" is projected to decline by as much as 40 percent. Three of every four youth-bulge countries that remain will be located in Sub-Saharan Africa; nearly all of the remainder will be located in the core of the Middle East, scattered through southern and central Asia, and in the Pacific Islands.

New Transnational Agenda

Resource issues will gain prominence on the international agenda. Unprecedented global economic growth—positive in so many other regards—will continue to put pressure on a number of **highly strategic resources**, including energy, food, and water, and demand is projected to outstrip easily available supplies over the next decade or so. For example, non-OPEC liquid hydrocarbon production—crude oil, natural gas liquids, and unconventionals such as tar sands—will not grow commensurate with demand. Oil and gas production of many traditional energy producers already is declining. Elsewhere—in China, India, and Mexico—production has flattened. Countries capable of significantly expanding production will dwindle; oil and gas production will be concentrated in unstable areas. As a result of this and other factors, the world will be in the midst of a fundamental energy transition away from oil toward natural gas, coal and other alternatives.

The World Bank estimates that **demand for food** will rise by 50 percent by 2030, as a result of growing world population, rising affluence, and the shift to Western dietary preferences by a larger middle class. Lack of access to stable supplies of water is reaching critical proportions, particularly for agricultural purposes, and the problem will worsen because of rapid urbanization worldwide and the roughly 1.2 billion persons to be added over the next 20 years. Today, experts consider 21 countries, with a combined population of about 600 million, to be either cropland or freshwater scarce. Owing to continuing population growth, 36 countries, with about 1.4 billion people, are projected to fall into this category by 2025.

Climate change is expected to exacerbate resource scarcities. Although the impact of climate change will vary by region, a number of regions will begin to suffer harmful effects, particularly water scarcity and loss of agricultural production. Regional differences in agricultural production are likely to become more pronounced over time with declines disproportionately concentrated in developing countries, particularly those in Sub-Saharan Africa. Agricultural losses are expected to mount with substantial impacts forecast by most economists by late this century. For many developing countries, decreased agricultural output will be devastating because agriculture accounts for a large share of their economies and many of their citizens live close to subsistence levels.

New technologies could again provide solutions, such as viable alternatives to fossil fuels or means to overcome food and water constraints. However, all current technologies are inadequate for replacing the traditional energy architecture on the scale needed, and new energy technologies probably will not be commercially viable and widespread by 2025. The pace of technological innovation will be key. Even with a favorable policy and funding environment for biofuels, clean coal, or hydrogen, the transition to new fuels will be slow. Major technologies historically have had an "adoption lag." In the energy sector, a recent study found that it takes an average of 25 years for a new production technology to become widely adopted.

Despite what are seen as long odds now, we cannot rule out the possibility of an **energy transition** by 2025 that would avoid the costs of an energy infrastructure overhaul. The greatest possibility for a relatively quick and inexpensive transition during the period comes from better renewable generation sources (photovoltaic and wind) and improvements in battery technology. With many of these technologies, the infrastructure cost hurdle for individual projects would be lower, enabling many small economic actors to develop their own energy transformation projects that directly serve their interests—e.g., stationary fuel cells powering homes and offices, recharging plug-in hybrid autos, and selling energy back to the grid. Also, energy conversion schemes—such as plans to generate hydrogen for automotive fuel cells from electricity in the homeowner's garage—could avoid the need to develop complex hydrogen transportation infrastructure.

Prospects for Terrorism, Conflict, and Proliferation

Terrorism, proliferation, and conflict will remain key concerns even as resource issues move up on the international agenda. Terrorism is unlikely to disappear by 2025, but its appeal could diminish if economic growth continues and youth unemployment is mitigated in the Middle East. Economic opportunities for youth and greater political pluralism probably would dissuade some from joining terrorists' ranks, but others—motivated by a variety of factors, such as a desire for revenge or to become "martyrs"—will continue to turn to violence to pursue their objectives.

In the absence of employment opportunities and legal means for political expression, conditions will be ripe for disaffection, growing radicalism, and possible recruitment of youths into **terrorist groups.** Terrorist groups in 2025 will likely be a combination of descendants of long-established groups—that inherit organizational structures, command and control processes, and training procedures necessary to conduct sophisticated attacks—and newly emergent collections of the angry and disenfranchised that become self-radicalized. For those terrorist groups that are active in 2025, the diffusion of technologies and scientific knowledge will place some of the world's most dangerous capabilities within their reach. One of our greatest concerns continues to be that terrorist or other malevolent groups might acquire and employ biological agents, or less likely, a nuclear device, to create mass casualties.

Although **Iran's** acquisition of nuclear weapons is not inevitable, other countries' worries about a nuclear-armed Iran could lead states in the region to develop new security arrangements with external powers, acquire additional weapons, and consider pursuing their own nuclear ambitions. It is not clear that the type of stable deterrent relationship that existed between the great powers for most of the Cold War would emerge naturally in the Middle East with a nuclear-weapons capable Iran. Episodes of low-intensity conflict taking place under a nuclear umbrella could lead to an unintended escalation and broader conflict if clear red lines between those states involved are not well established.

We believe **ideological conflicts** akin to the Cold War are unlikely to take root in a world in which most states will be preoccupied with the pragmatic challenges of globalization and shifting global power alignments. The force of ideology is likely to be strongest in the Muslim world—particularly the Arab core. In those countries that are likely to struggle with youth bulges and weak economic underpinnings—such as Pakistan, Afghanistan, Nigeria, and Yemen—the radical Salafi trend of Islam is likely to gain traction.

Types of **conflict** we have not seen for awhile—such as over resources—could reemerge. Perceptions of energy scarcity will drive countries to take actions to assure their future access to energy supplies. In the worst case, this could result in interstate conflicts if government leaders deem assured access to energy resources, for example, to be essential for maintaining domestic stability and the survival of their regimes. However, even actions short of war will have important geopolitical consequences. Maritime security concerns are providing a rationale for naval buildups and modernization efforts, such as China's and India's development of blue-water naval capabilities. The buildup of regional naval capabilities could lead to increased tensions, rivalries, and counterbalancing moves but it also will create opportunities for multinational cooperation in protecting critical sea lanes. With water becoming more scarce in Asia and the Middle East, cooperation to manage changing water resources is likely to become more difficult within and between states.

The risk of **nuclear weapon use** over the next 20 years, although remaining very low, is likely to be greater than it is today as a result of several converging trends. The spread of nuclear technologies and expertise is generating concerns about the potential emergence of new nuclear weapon states and the acquisition of nuclear materials by terrorist groups. Ongoing low-intensity clashes between India and Pakistan continue to raise the specter that such events could escalate to a broader conflict between those nuclear powers. The possibility of a future disruptive regime change or collapse occurring in a nuclear weapon state such as North Korea also continues to raise questions regarding the ability of weak states to control and secure their nuclear arsenals.

If nuclear weapons are used in the next 15-20 years, the international system will be shocked as it experiences immediate humanitarian, economic, and political-military repercussions. A future use of nuclear weapons probably would bring about significant geopolitical changes as some states would seek to establish or reinforce security alliances with existing nuclear powers and others would push for global nuclear disarmament.

A More Complex International System

The trend toward greater diffusion of authority and power that has been occurring for a couple decades is likely to accelerate because of the emergence of new global players, the worsening institutional deficit, potential expansion of regional blocs, and enhanced strength of nonstate actors and networks. The **multiplicity of actors** on the international scene could add strength—in terms of filling gaps left by aging post-World War II institutions—or further fragment the international system and incapacitate international cooperation. The diversity in type of actor raises the likelihood of fragmentation occurring over the next two decades, particularly given the wide array of transnational challenges facing the international community.

The rising BRIC powers are unlikely to challenge the international system as did Germany and Japan in the 19th and 20th centuries, but because of their growing geopolitical and economic clout, they will have a high degree of freedom to customize their political and economic policies rather than fully adopting Western norms. They also are likely to want to preserve their policy freedom to maneuver, allowing others to carry the primary burden for dealing with such issues as terrorism, climate change, proliferation, and energy security.

Existing multilateral institutions—which are large and cumbersome and were designed for a different geopolitical order—will have difficulty adapting quickly to undertake new missions, accommodate changing memberships, and augment their resources.
Nongovernmental organizations (NGOs)—concentrating on specific issues—increasingly will be a part of the landscape, but NGO networks are likely to be limited in their ability to effect change in the absence of concerted efforts by multilateral institutions or governments. Efforts at greater inclusiveness—to reflect the emergence of the newer powers—may make it harder for international organizations to tackle transnational challenges. Respect for the dissenting views of member nations will continue to shape the agenda of organizations and limit the kinds of solutions that can be attempted.

Greater **Asian regionalism**—possible by 2025—would have global implications, sparking or reinforcing a trend toward three trade and financial clusters that could become quasi-blocs: North America, Europe, and East Asia. Establishment of such quasi-blocs would have implications for the ability to achieve future global World Trade Organization (WTO) agreements. Regional clusters could compete in setting trans-regional product standards for information technology, biotechnology, nanotechnology, intellectual property rights, and other aspects of the "new economy." On the other hand, an absence of regional cooperation in Asia could help spur competition among China, India, and Japan over resources such as energy.

Intrinsic to the growing complexity of the overlapping roles of states, institutions, and nonstate actors is the **proliferation of political identities**, which is leading to establishment of new networks and rediscovered communities. No one political identity is likely to be dominant in most societies by 2025. Religion-based networks may be quintessential issue networks and overall may play a more powerful role on many transnational issues such as the environment and inequalities than secular groupings.

The United States: Less Dominant Power
By 2025 the US will find itself as one of a number of important actors on the world stage, albeit still the most powerful one. Even in the military realm, where the US will continue to possess considerable advantages in 2025, advances by others in science and technology, expanded adoption of irregular warfare tactics by both state and nonstate actors, proliferation of long-range precision weapons, and growing use of cyber warfare attacks increasingly will constrict US freedom of action. A more constrained US role has implications for others and the likelihood of new agenda issues being tackled effectively. Despite the recent rise in anti-Americanism, the US probably will continue to be seen as a much-needed regional balancer in the Middle East and Asia. The US will continue to be expected to play a significant role in using its military power to counter global terrorism. On newer security issues like climate change, US leadership will be widely perceived as critical to leveraging competing and divisive views to find solutions. At the same time, the multiplicity of influential actors and distrust of vast power means less room for the US to call the shots without the support of strong partnerships. Developments in the rest of the world, including internal developments in a number of key states—particularly China and Russia—are also likely to be crucial determinants of US policy.

2025—What Kind of Future?

The above trends suggest major **discontinuities**, shocks, and surprises, which we highlight throughout the text. Examples include nuclear weapons use or a pandemic. In some cases, the surprise element is only a matter of **timing**: an energy transition, for example is inevitable; the only questions are when and how abruptly or smoothly such a transition occurs. An energy transition from one type of fuel (fossil fuels) to another (alternative) is an event that historically has only happened once a century at most with momentous consequences. The transition from wood to coal helped trigger industrialization. In this case, a transition—particularly an abrupt one—out of fossil fuels would have major repercussions for energy producers in the Middle East and Eurasia, potentially causing permanent decline of some states as global and regional powers.

Other discontinuities are less predictable. They are likely to result from an interaction of several trends and depend on the quality of leadership. We put uncertainties such as whether China or Russia becomes a democracy in this category. China's growing middle class increases the chances but does not make such a development inevitable. Political pluralism seems less likely in Russia in the absence of economic diversification. Pressure from below may force the issue, or a leader might begin or enhance the democratization process to sustain the economy or spur economic growth. A sustained plunge in the price of oil and gas would alter the outlook and increase prospects for greater political and economic liberalization in Russia. If either country were to democratize, it would represent another wave of democratization with wide significance for many other developing states.

Also **uncertain** are the outcomes of demographic challenges facing Europe, Japan, and even Russia. In none of these cases does demography have to spell destiny with less regional and global power an inevitable outcome. Technology, the role of immigration, public health improvements, and laws encouraging greater female participation in the economy are some of the measures that could change the trajectory of current trends pointing toward less economic growth, increased social tensions, and possible decline.

Whether global institutions adapt and revive—another key uncertainty—also is a function of leadership. Current trends suggest a dispersion of power and authority will create a global governance deficit. Reversing those trend lines would require strong leadership in the international community by a number of powers, including the emerging ones.

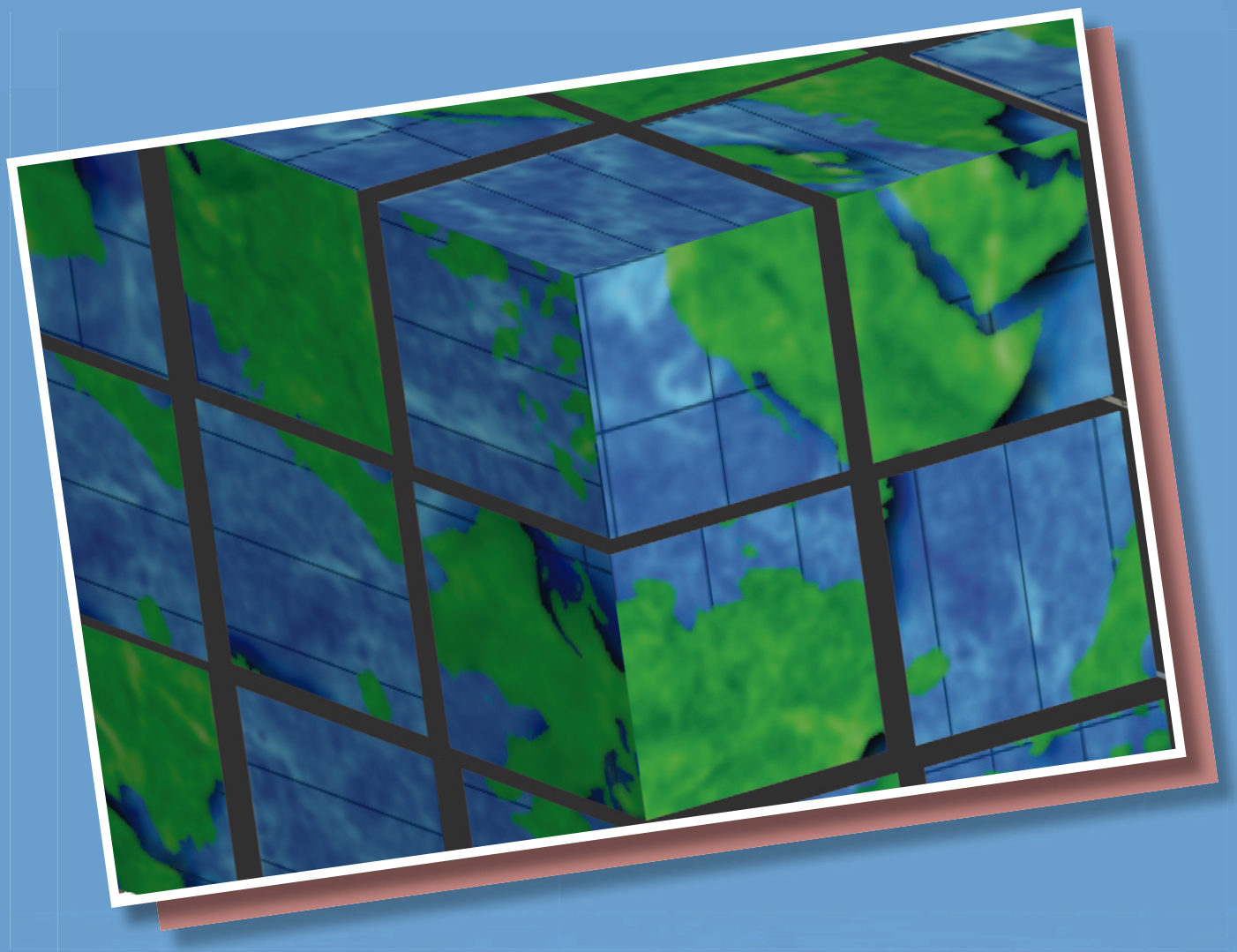
Some uncertainties would have greater consequences—should they occur—than would others. In this work, we emphasize the overall potential for greater conflict—some forms of which could threaten globalization. We put WMD terrorism and a Middle East nuclear arms race in this category. The key uncertainties and possible impacts are discussed in the text and summarized in the textbox on page vii. In the four fictionalized scenarios, we have highlighted new challenges that could emerge as a result of the ongoing global transformation. They present new situations, dilemmas, or predicaments that represent departures from recent developments. As a set, they do not cover all possible futures. ***None of these is inevitable or even necessarily likely***; but, as with many other uncertainties, the scenarios are potential game-changers.

- In ***A World Without the West***, the new powers supplant the West as the leaders on the world stage.

- ***October Surprise*** illustrates the impact of inattention to global climate change; unexpected major impacts narrow the world's range of options.

- In ***BRICs' Bust-Up***, disputes over vital resources emerge as a source of conflict between major powers—in this case two emerging heavyweights—India and China.

- In ***Politics is Not Always Local,*** nonstate networks emerge to set the international agenda on the environment, eclipsing governments.



Introduction

A Transformed World

The international system—as constructed following the Second World War—will be almost unrecognizable by 2025. Indeed, "international system" is a misnomer as it is likely to be more ramshackle than orderly, its composition hybrid and heterogeneous as befits a transition that will still be a work in progress in 2025. The transformation is being fueled by a globalizing economy, marked by an historic shift of relative wealth and economic power from West to East, and by the increasing weight of new players—especially China and India. The US will remain the single most important actor but will be less dominant. As was true of the United States in the 19th and 20th centuries, China and India will at times be reticent and at other times impatient to assume larger roles on the world stage. In 2025, both will still be more concerned about their own internal development than changing the international system.

Concurrent with the shift in power among nation-states, the ***relative*** power of various nonstate actors—including businesses, tribes, religious organizations, and even criminal networks—will continue to increase. Several countries could even be "taken over" and run by criminal networks. In areas of Africa or South Asia, states as we know them might wither away, owing to the inability of governments to provide for basic needs, including security.

By 2025, the international community will be composed of many actors in addition to nation-states and will lack an overarching approach to global governance. The "system" will be multipolar with many clusters of both state and nonstate actors. Multipolar international systems—like the Concert of Europe—have existed in the past, but the one that is emerging is unprecedented because it is global and encompasses a mix of state and nonstate actors that are not grouped into rival camps of roughly equal weight. The most salient characteristics of the "new order" will be the shift from a unipolar world dominated by the United States to a relatively unstructured hierarchy of old powers and rising nations, and the diffusion of power from state to nonstate actors.

"…we do not believe that we are headed toward a complete breakdown [of the international system]…However, the next 20 years of transition toward a new international system are fraught with risks…"

History tells us that rapid change brings many dangers. Despite the recent financial volatility, which could end up accelerating many ongoing trends, we do not believe that we are headed toward a complete breakdown—as occurred in 1914-1918 when an earlier phase of globalization came to a halt. However, the next 20 years of transition toward a new international system are fraught with risks—more than we envisaged when we published ***Mapping the Global Future***[3] in 2004. These risks include the growing prospect of a nuclear arms race in the Middle East and possible interstate conflicts over resources. The breadth of transnational issues requiring attention also is increasing to include issues connected with resource constraints in energy, food, and water; and worries about climate change. Global institutions that could help the world deal with these transnational issues and, more generally, mitigate the risks of rapid change currently appear incapable of rising to the

[3] See ***Mapping the Global Future: Report of the National Intelligence Council's 2020 Project***, National Intelligence Council, December 2004, which can be found at: www.dni.gov/nic/NIC_2020_project.html.

Comparison Between *Mapping the Global Future: Report of the Intelligence Council's 2020 Project* and *Global Trends 2025: A Transformed World*

The most dramatic difference between ***Mapping the Global Future: Report of the Intelligence Council's 2020 Project*** and ***Global Trends 2025: A Transformed World*** is the latter's assumptions of a multipolar future, and therefore dramatic changes in the international system. The 2025 report describes a world in which the US plays a prominent role in global events, but the US is one among many global actors who manage problems. In contrast, the 2020 report projects continued US dominance, positing that most major powers have forsaken the idea of balancing the US.

The two documents also differ in their treatment of energy supply, demand, and new alternative sources. In 2020, energy supplies "in the ground" are considered "sufficient to meet global demand." What is uncertain, according to the earlier report, is whether political instability in producer countries, supply disruptions, or competition for resources might deleteriously affect international oil markets. Though 2020 mentions the global increase in energy consumption, it emphasizes the domination of fossil fuels. In contrast, 2025 sees the world in the midst of a transition to cleaner fuels. New technologies are projected to provide the capability for fossil fuel substitutes and solutions to water and food scarcity. The 2020 report acknowledges that energy demands will influence superpower relations, but the 2025 report considers energy scarcity as a driving factor in geopolitics.

Both reports project probable strong global economic growth—fueled by the rise of Brazil, Russia, India, and China, absent major shocks. The 2025 report, however, assesses the likelihood of major discontinuities to be high, emphasizing that "no single outcome seems preordained" and that the next 20 years of transition toward a new international system are fraught with risks, such as a nuclear arms race in the Middle East and possible interstate conflicts over resources.

The scenarios in both reports address the future of globalization, the future structure of the international system, and the dividing lines among groups that will cause conflict or convergence. In both reports, globalization is seen as a driver so pervasive that it will reorder current divisions based on geography, ethnicity, and religious and socio-economic status.

challenges without concerted efforts by their leaders.

More Change than Continuity

The rapidly changing international order at a time of growing geopolitical challenges increases the likelihood of discontinuities, shocks, and surprises. No single outcome seems preordained: the Western model of economic liberalism, democracy, and secularism, for example, which many assumed to be inevitable, may lose its luster—at least in the medium term.

In some cases, the surprise element is only a matter of timing: an energy transition, for example, is inevitable; the only questions are when and how abruptly or smoothly such a transition occurs. Other discontinuities are less predictable. Recognizing that what may seem implausible today could become feasible or even likely by 2025, we have looked at a number of single development "shocks." Examples include the global impact of a nuclear arms exchange, a rapid replacement for fossil fuels, and a "democratic" China.

New technologies could provide solutions, such as viable alternatives to fossil fuel or means to overcome food and water constraints. A critical uncertainty is whether new technologies will be developed and commercialized in time to avert a significant slowdown in economic growth owing to resource constraints. Such a slowdown would jeopardize the rise of new powers and deal a serious blow to the aspirations of those countries not yet fully in the globalization game. A world in which shortages predominate could trigger behaviors different from one in which scarcities are overcome through technology or other means.

Alternative Futures

This study is organized into seven sections that examine:

- The Globalizing Economy.
- Demographics of Discord.
- The New Players.
- Scarcity in the Midst of Plenty.
- Growing Potential for Conflict.
- Will the International System Be Up to the Challenges?
- Power-Sharing in a Multipolar World.

As with our previous works, we will describe possible alternative futures that could result from the trends we discuss.[4] We see the next 15-20 years as one of those great historical turning points where multiple factors are likely to be in play. How such factors intersect with one another and the role of leadership will be crucial to the outcome.

In constructing these scenarios, we focused on critical uncertainties regarding the relative importance of the nation-state as compared with nonstate actors, and the level of global cooperation. In some of the scenarios, states are more dominant and drive global dynamics; in others, nonstate actors, including religious movements, nongovernmental organizations (NGOs), and super-empowered

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[4] See ***Global Trends 2015***, ***A Dialogue About the Future with Nongovernment Experts,*** National Intelligence Council, December 2000; and ***Mapping the Global Future: Report of the National Intelligence Council's 2020 Project***, National Intelligence Council, December 2004. The reports can be found at www.dni.gov/nic/NIC_global trends 2015.html and www.dni.gov/nic/NIC_2020_project.html respectively.

individuals play more important roles. In some of the scenarios, key players interact in competing groups, through partnerships and cross-border affiliations. Other scenarios envision more interaction as autonomous players operate independently and sometimes conflict with one another.

In all the ***fictionalized scenarios***, we highlight challenges that could emerge as a result of the ongoing global transformation. The scenarios present new situations, dilemmas, or predicaments that would cause upheavals in the global landscape, leading to very different "worlds." ***None of these is inevitable or even necessarily likely***; but, as with many other uncertainties, they are potential game-changers.

A World Without the West. In this world, described in a fictional letter from a future head of the Shanghai Cooperation Organization (SCO), new powers supplant the West as the leaders on the world stage. The US feels overburdened and withdraws from Central Asia, including Afghanistan; Europe will not step up to the plate and take the lead. Russia, China, and others are forced to deal with the potential for spillover and instability in Central Asia. The SCO gains ascendance while NATO's status declines. Anti-China antagonism in the US and Europe reaches a crescendo; protectionist trade barriers are put in place. Russia and China enter a marriage of convenience; other countries—India and Iran—rally around them. The lack of any stable bloc—whether in the West or the non-Western world—adds to growing instability and disorder, potentially threatening globalization.

October Surprise. In this world, depicted in a diary entry of a future US President, many countries have been preoccupied with achieving economic growth at the expense of safeguarding the environment. The scientific community has not been able to issue specific warnings, but worries increase that a tipping point has been reached in which climate change has accelerated and possible impacts will be very destructive. New York City is hit by a major hurricane linked to global climate change; the NY Stock Exchange is severely damaged and, in the face of such destruction, world leaders must begin to think about taking drastic measures, such as relocating parts of coastal cities.

BRICs' Bust-Up. In this world, conflict breaks out between China and India over access to vital resources. Outside powers intervene before the conflict escalates and expands into a global conflagration. The clash is triggered by Chinese suspicion of efforts by others to threaten Beijing's energy supplies. Misperceptions and miscalculations lead to the clash. The scenario highlights the importance of energy and other resources to continued growth and development as a great power. It shows the extent to which conflict in a multipolar world is just as likely to occur between rising states as between older and newer powers.

Politics is Not Always Local. In this world, outlined in an article by a fictional ***Financial Times*** reporter, various nonstate networks—NGOs, religious groups, business leaders, and local activists—combine to set the international agenda on the environment and use their clout to elect the UN Secretary General. The global political coalition of nonstate actors plays a crucial role in securing a new worldwide climate change agreement. In this new connected world of digital communications, growing middle classes, and transnational interest groups, politics is no longer local and domestic and international agendas become increasingly interchangeable.

Long-Range Projections: A Cautionary Tale

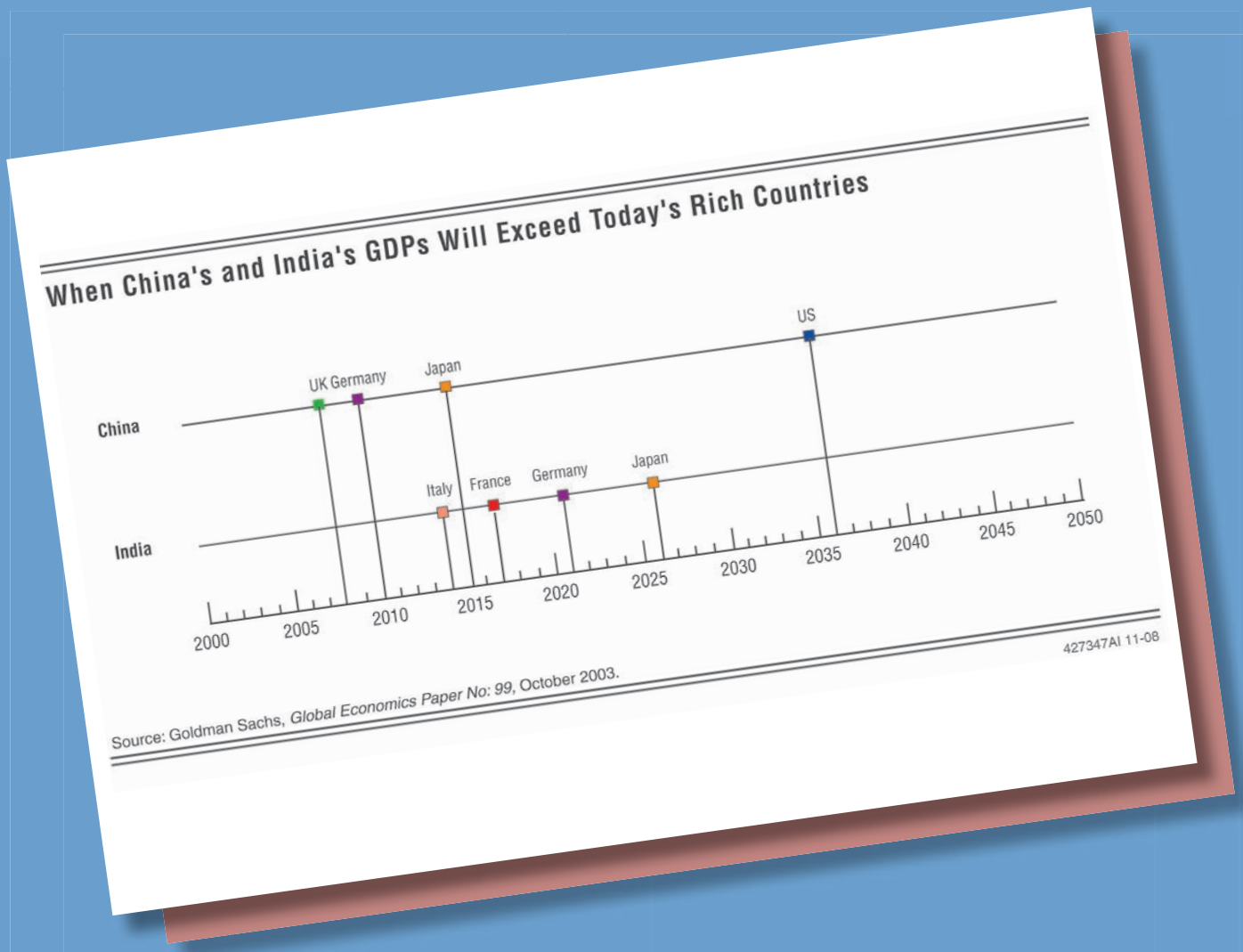
In the 20th century, experts forecasting the next 20 years—roughly the time frame of this study—often missed major geopolitical events, basing their predictions largely on linear projections without exploring possibilities that could cause discontinuities. Before WW I, while tensions between European "great powers" were on the rise, few had an inkling of major changes in the offing, from the extent of mutual slaughter to the downfall of age-old empires. In the early 1920s, few envisioned the lethal situation about to unfold, ushered in by the Great Depression, Stalin's gulags, and an even more bloody world war encompassing multiple genocides. The postwar period saw the establishment of a new international system—many of whose institutions—the UN and Bretton Woods—remain with us. Although the bipolar and nuclear age did not lack war and conflict, it did provide a stable framework until the collapse of the Soviet Union. The development of a globalized economy in which China and India play major roles has opened a new era without clear outcomes.

Lessons from the last century, however, appear to suggest:

- **Leaders and their ideas matter**. No history of the past hundred years can be told without delving into the roles and thinking of such leaders as Vladimir Lenin, Josef Stalin, Adolf Hitler or Mao Zedong. The actions of dominating leaders are the hardest element to anticipate. At several junctures in the 20th century, Western experts thought liberal and market ideas had triumphed. As demonstrated by the impacts of Churchill, Roosevelt, and Truman, leadership is key even in societies where institutions are strong and the maneuvering room for wielding personal power is more constrained.

- **Economic volatility introduces a major risk factor.** Historians and social scientists have discovered a strong correlation between rapid economic change—both positive and negative—and political instability. The massive dislocation and economic volatility introduced by the end of the "first" globalization in 1914-1918 and the rise of protectionist barriers in the 1920s and 1930s, combined with the lingering resentments over the Versailles peace settlement, laid the groundwork for WW II. The collapse of multinational and ethnic empires—begun after WW I and continuing with the end of the colonial empires in the post-WW II period—also unleashed a long series of national and ethnic conflicts that reverberates today. Today's globalization also has spurred the movement of people, disrupting traditional social and geographic boundaries.

- **Geopolitical rivalries trigger discontinuities more than does technological change.** Many stress the role of technology in bringing about radical change and there is no question it has been a major driver. We—as others—have oftentimes underestimated its impact. However, over the past century, geopolitical rivalries and their consequences have been more significant causes of the multiple wars, collapse of empires, and rise of new powers than technology alone.



Chapter 1

The Globalizing Economy

In terms of size, speed, and directional flow, the global shift in relative wealth and economic power now under way—roughly from West to East—is without precedent in modern history. This shift derives from two key sources. First, sustained increases in oil and commodity prices have generated windfall profits for the Gulf states and Russia. Second, relatively low labor costs combined with certain government policies have shifted the locus of manufacturing and some service industries to Asia. Strong global demand for these products has made for wide economies of scale margins across Asia, particularly in China and India. These shifts in demand and supply are deep and structural, which suggests that the resulting transfer of economic power we are witnessing is likely to endure. These shifts are the driving force behind globalization that—as we underlined in our ***Mapping the Global Future*** report—is a meta-trend, transforming historic patterns of economic flows and underlying stocks, creating pressures for rebalancing that are painful for both rich and poor countries.

"In terms of size, speed, and directional flow, the global shift in relative wealth and economic power now under way—roughly from West to East—is without precedent in modern history."

Although this transfer is not zero-sum, early losers such as most of Latin America (with the exception of Brazil and a few others) and Africa are receiving neither a stake in the initial asset transfer nor any significant inbound investment from the recipient countries. Certain industrialized states such as Japan also appear increasingly challenged by inchoate financial links among these emerging markets. The US and Eurozone are receiving much of this emerging market liquidity, but whether they will benefit relative to their current position depends on several factors, including the ability of Western countries to reduce oil consumption and demand, the ability of these states to capitalize on a favorable export climate in sectors of comparative strength, such as technology and services, and the domestic policies of recipient states, particularly on issues of monetary policy and openness to foreign investment.

Back to the Future

Asia's economic powerhouses—China and India—are restoring the positions they held two centuries ago when China produced approximately 30 percent and India 15 percent of the world's wealth. China and India, for the first time since the 18th century, are set to be the largest contributors to worldwide economic growth. These two countries will likely surpass the GDP of all other economies except the US and Japan by 2025, but they will continue to lag in per capita income for decades. The years around 2025 will be characterized by the "dual identity" of these Asian giants: powerful, but many individual Chinese or Indians feeling relatively poor compared to Westerners.

Growth projections for Brazil, Russia, India, and China have them collectively matching the original G-7's share of global GDP by 2040-2050. According to these same projections, the eight largest economies in 2025 will be, in descending order: the US, China, India, Japan, Germany, the UK, and France, and Russia.

China, especially, has emerged as a new financial heavyweight, claiming $2 trillion in foreign exchange reserves in 2008. Rapidly developing countries, including China and Russia, have created sovereign wealth funds (SWFs)[5] with the aim of using their hundreds

[5] Sovereign wealth funds (SWFs) constitute capital generated from government surpluses and invested in private markets abroad. Since 2005, the number of

of billions of dollars' worth of assets to achieve higher returns to help them weather economic storms. Some of these funds will return to the West in the form of investments, thereby promoting greater productivity and economic competitiveness. However, foreign direct investment (FDI) by emerging powers in the developing world is increasing significantly.

A generation of globally competitive companies is emerging from the new powers, helping to further solidify their position in the global marketplace; from Brazil in agribusiness and offshore energy exploration; Russia in energy and metals; India in IT services, pharmaceuticals, and auto parts; and China in steel, home appliances, and telecommunications equipment. Of the top 100 new global corporate leaders from the non-OECD world listed in a 2006 report from The Boston Consulting Group, 84 were headquartered in Brazil, Russia, China and India.

Growing Middle Class

We are witnessing an unprecedented moment in human history: never before have so many been lifted out of extreme poverty as is happening today. A stunning 135 million people escaped dire poverty between 1999 and 2004 alone—more than the population of Japan and almost as many as live in Russia today.

Over the next several decades the number of people considered to be in the "global middle class" is projected to swell from 440 million to 1.2 billion or from 7.6 percent of the world's population to 16.1 percent, according to the World Bank. Most of the new entrants will come from China and India.

- However, there is a dark side to the global middle class coin: continued divergence at the extremes. Many countries—especially the landlocked and resource-poor ones in Sub Saharan Africa—lack the fundamentals for entering the globalization game. By 2025-2030, the portion of the world considered poor will shrink by about 23 percent, but the world's poor—still 63 percent of the globe's population—stand to become relatively poorer, according to the World Bank.

State Capitalism: A Post-Democratic Marketplace Rising in the East?

The monumental achievement of millions escaping extreme poverty underpins the rise of new powers—especially China and India—on the international scene but does not tell the whole story. Today wealth is moving not just from West to East but is concentrating more under state control. In the wake of the 2008 global financial crisis, the state's role in the economy may be gaining more appeal throughout the world.

With some notable exceptions like India, the states that are beneficiaries of the massive shift of wealth—China, Russia, and Gulf states—are non-democratic and their economic policies blur distinctions between public and private. These states are not following the Western liberal model for self-development but are using a different model—"state capitalism." State capitalism is a loose term to describe a system of

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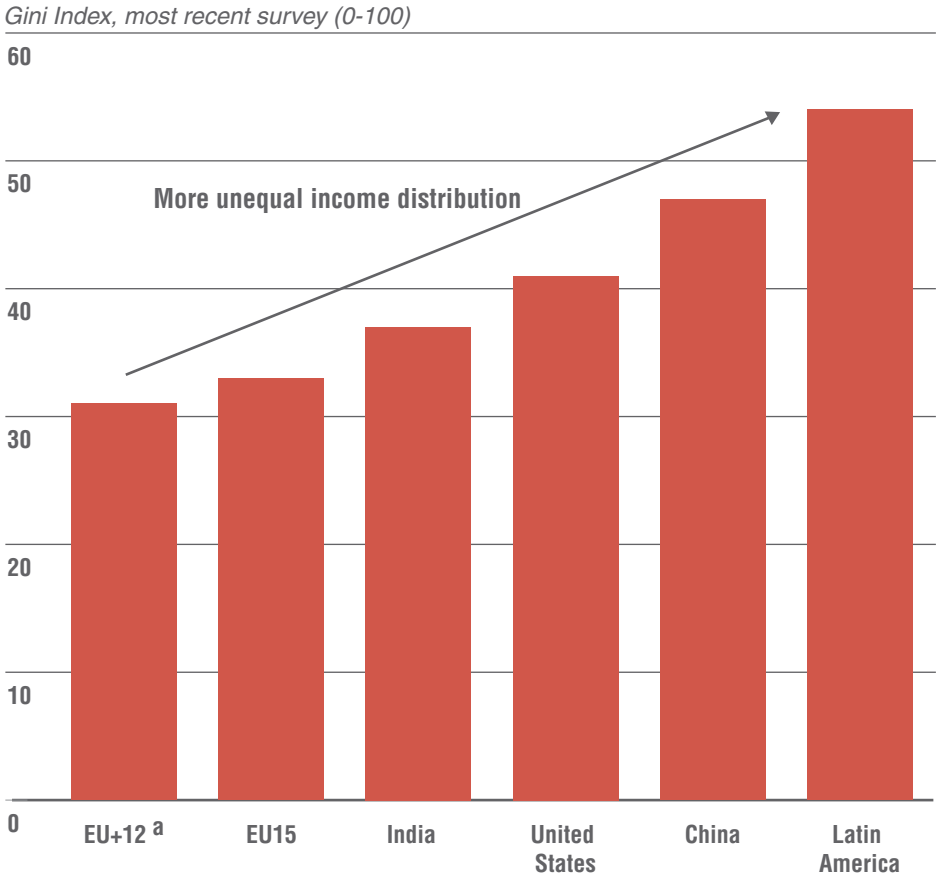
states with SWFs has grown from three to over 40, and the aggregate sum under their control from around $700 billion to $3 trillion. The range of functions served by SWFs also has expanded, as many of the states that created them recently have done so out of a desire to perpetuate current account surpluses, or to cultivate intergenerational savings, rather than to buffer commodity market volatility. Should current trends hold, SWFs will swell to over $6.5 trillion within five years, and to $12-15 trillion within a decade, exceeding total fiscal reserves and comprising some 20 percent of all global capitalization.

Regional Income Inequality: European Inequality Lower Than Most



[a]European Union Nations that acceded in 2004 or later.
Source: UNDP, Human Development Report 2007/2008: World Bank.

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economic management that gives a prominent role to the state.

Others—like South Korea, Taiwan, and Singapore—also chose state capitalism as they initially developed their economies. However, the impact of Russia, and particularly China, following this path is potentially greater given their weight on the world stage. Ironically, the major enhancement of the state role in Western economies now under way as a result of the current financial crisis may reinforce the emerging countries' preference for greater state control and distrust of an unregulated marketplace.

These states typically favor:

- ***An Open Export Climate***. Given the wealth flowing into these states, their desire for a weak currency despite strong domestic economic performance requires heavy intervention in currency markets, leading to heavy official asset accumulation, typically until now in the form of US Treasury bonds.

Globalization at Risk with the 2008 Financial Crisis?

As with most of the trends discussed in this report, the impacts from the financial crisis will depend heavily on government leadership. Proactive fiscal and monetary policies probably will ensure the current panic and likely deep national recessions will not turn into an extended depression, although reduced economic growth could slow globalization's pace, increasing protectionist pressures and financial fragmentation.

The crisis is accelerating the global economic rebalancing. Developing countries have been hurt; several, such as Pakistan with its large current account deficit, are at considerable risk. Even those with cash reserves—such as South Korea and Russia—have been severely buffeted; steep rises in unemployment and inflation could trigger widespread political instability and throw emerging powers off course. However, if China, Russia, and Mideast oil exporters can avoid internal crises, they will be in a position to leverage their likely still sizeable reserves, buying foreign assets and providing direct financial assistance to still-struggling countries for political favors or to seed new regional initiatives. In the West, the biggest change—not anticipated before the crisis—is the increase in state power. Western governments now own large swaths of their financial sectors and must manage them, potentially politicizing markets.

The crisis has increased calls for a new "Bretton Woods" to better regulate the global economy. World leaders, however, will be challenged to renovate the IMF and devise a globally transparent and effective set of rules that apply to differing capitalisms and levels of financial institutional development. Failure to construct a new all-embracing architecture could lead countries to seek security through competitive monetary policies and new investment barriers, increasing the potential for market segmentation.

- ***Sovereign Wealth Funds (SWFs) and Other State Investment Vehicles***. Having amassed huge assets, Gulf Cooperation Council (GCC) and Chinese officials have increasingly used various forms of sovereign investment. States entering private markets are doing so partly for the prospect of higher return. SWFs are the most widely publicized but only one of many sovereign investment vehicles.

- ***Renewed Efforts Toward Industrial Policy.*** Governments that highly manage their economies often have an interest in industrial policy. China, Russia, and the Gulf states have state plans to diversify their economies and climb the value-added ladder into high technology and service sectors. The significant difference between today's efforts and those of earlier periods, however, is that these states now directly own the economic wherewithal to implement their plans and need not rely on incentivizing parties or luring foreign capital.

- ***Rollback of Privatization and the Resurgence of State-Owned Enterprises (SOEs).*** In the early 1990s, many economists predicted that SOEs would be a relic of the 20th century. They were wrong. SOEs are far from extinction, are thriving, and in many cases seek to

expand beyond their own borders, particularly in the commodities and energy sectors. SOEs, especially national oil companies, are likely to attract investment for the surfeit of ready capital that these states are accumulating. Much like SWFs, SOEs serve a secondary function as pressure valves, helping to relieve inflation and currency appreciation pressures. They also can act as vehicles for increased political control. To the extent state-owned firms reach across state borders, they may become vehicles for geopolitical influence, particularly those dealing in key strategic resources such as energy.

The increasing role of the state as a player in emerging markets has contrasted until recently with nearly opposite trends in the West, where the state has struggled to keep pace with private financial engineering, such as derivatives and credit swaps. The seeds of this capital market's depth and complexity date to the 1980s but grew with rising asset prices and bull markets from the 1990s until recently. The financial engineering—based upon a magnitude of leverage unthinkable even a decade ago—in turn has injected an unprecedented degree of risk and volatility into global markets. Greater controls and international regulation—a possible outcome of the current financial crisis—could change this trajectory, although a gap on the role of the state in the economy is likely to remain between the West and the rapidly emerging economic powers.

Bumpy Ride in Correcting Current Global Imbalances

The refusal of emerging markets to allow currency appreciation despite booming economies, together with the willingness of the US to incur greater sums of debt, has created a mutually supporting, albeit ultimately unsustainable cycle of imbalances. Indeed, the Wall Street events of 2008 mark the opening chapters of a larger story of rebalancing and course correction from these imbalances. The righting of these imbalances will be bumpy as the global economy moves into realignment. The difficulties of global economic policy coordination—in part a byproduct of the growing political and financial multipolarity—increase the chances of a bumpy ride.

One of the following developments or a combination could cause an adjustment: a slowdown in US consumption and an attendant increase in the US savings rate, and an increase in demand from emerging Asian markets, particularly China and India. Whether imbalances stabilize or rebound out to 2025 depends in part on the particular lessons that the emerging powers choose to draw from the financial crisis. Some may interpret the crisis as a rationale for hoarding yet more in the way of a cushion, while others—in understanding that few if any emerging economies were immune from the widespread downturn—could come to regard the stockpiling of reserves as less of a priority.

Major financial disruptions and the needed economic and political readjustments have often spread beyond the financial arena. History suggests that this rebalancing will require long-term efforts to establish a new international system. Specific problems to be overcome include:

- ***Greater Trade and Investment Protectionism***. Increasingly aggressive foreign acquisitions by corporations based in the rapidly emerging economies—many will be state-owned—will raise political tensions, potentially creating a public backlash in countries against foreign trade and investment. The perception of uneven benefits from

globalization in the US may fuel protectionist forces.

- ***An Accelerated Resource Grab***. The new powers increasingly will have the means to acquire commodities in an effort to ensure continued development. Russia, China, and India have linked their national security to increased state control of and access to energy resources and markets through their state-owned energy firms. Gulf states are interested in land leases and purchases elsewhere to ensure adequate food supplies.

- ***Slowing Democratization.*** China, particularly, offers an alternative model for political development in addition to demonstrating a different economic pathway. This model may prove attractive to under-performing authoritarian regimes, in addition to weak democracies frustrated by years of economic underperformance.

- ***The Overshadowing of International Financial Institutions***. Sovereign wealth funds have injected more capital into emerging markets than the IMF and World Bank combined, and this trend could even continue with unwinding global imbalances. China already is beginning to couple SWF investment with direct aid and foreign assistance, often directly outbidding the World Bank on development projects. Such foreign investment by newly rich states such as China, Russia, and the GCC states will lead to diplomatic realignments and new relationships between these states and the developing world.

- ***A Decline in the Dollar's International Role***. Despite recent inflows into dollar assets and the appreciation of the dollar, the dollar could lose its status as an unparalleled global reserve currency by 2025, and become a first among equals in a market basket of currencies. This may force the US to consider more carefully how the conduct of its foreign policy affects the dollar. Without a steady source of external demand for dollars, US foreign policy actions might bring exposure to currency shock and higher interest rates for Americans.

Growing use of the euro is already evident, potentially making it harder for the US in the future to exploit the unique role of the dollar in international trade and investment to freeze assets and disrupt the financial flows of its adversaries, such as it recently has accomplished with financial sanctions against the leadership in North Korea and Iran. Incentives and inclinations to move away from the dollar will be tempered, however, by uncertainties and instabilities in the international financial system.

Multiple Financial Nodes

Anchored by the US and EU in the West, Russia and the GCC states in Central Asia and the Middle East, and China and eventually India in the East, the financial landscape for the first time will be genuinely global and multipolar. Insomuch as the recent financial crisis heightens interest in less leveraged finance, Islamic finance may also see a boost. While such a global and multipolar financial order signals a relative decline for US power and a likely increase in market competition and complexity, these downsides are likely to be accompanied by many positives. Over time, and as they develop, these multiple financial centers may create redundancies that help insulate markets against financial shocks and currency crises, quelling their effects before global contagion takes hold. Similarly, as regions become more invested in their financial epicenters, incentives to preserve geopolitical stability to

Science and Technology Leadership: A Test for the Emerging Powers

The relationship between achievements in science and technology and economic growth has been long established, but the path is not always predictable. More significant is the overall effectiveness of a nation's National Innovation System (NIS)—the process by which intellectual concepts are moved toward commercialization for the benefit of a national economy. According to a NIC-contracted global survey of scientific experts, the United States currently boasts a stronger innovation system than the developing economies of China and India.

- The idea of an NIS was first developed in the 1980s as an aid to understanding how some countries were proving better than others at turning intellectual concepts into commercial products that would boost their economies. The NIS model is evolving as information technology and the effect of increased globalization (and multinational corporations) influence national economies.

According to the NIC-commissioned study, nine factors can contribute to a modern NIS: fluidity of capital, flexibility of the labor pool, government receptivity to business, information communication technologies, private sector development infrastructure, legal systems to protect intellectual property rights, available scientific and human capital, marketing skills, and cultural propensity to encourage creativity.

China and India are expected in 10 years to achieve near parity with the US in two different areas: scientific and human capital (India) and government receptivity to business innovation (China). China and India will narrow significantly but not close the gap in all remaining factors. The United States is expected to remain dominant in three areas: protection for intellectual property rights, business sophistication to mature innovation, and encouragement of creativity.

Companies in China, India, and other major developing countries have unique opportunities to be the first to develop a host of emerging technologies. This is especially the case in those instances where companies are building new infrastructure and not burdened by historical patterns of development. Such opportunities include distributed electrical power generation, development of clean water sources, and the next generation of Internet and new information technologies (such as ubiquitous computing and the Internet of Things—see the foldout). Early and significant adoption of these technologies could provide considerable economic advantage.

shelter these financial flows will increase. History suggests, however, that such a redirection toward regional financial centers could soon spill over into other areas of power. Rarely, if ever, have such "financiers of last resort" been content to limit their influence to strictly financial realms. Inter-regional tensions could divide the West with the US and EU having increasingly divergent economic and monetary priorities, complicating Western efforts to lead and jointly grow the global economy.

Diverging Development Models, but for How Long?

The state-centric model in which the state makes the key economic decisions and, in the case of China and increasingly Russia, democracy is restricted, raises questions about the inevitability of the traditional Western recipe—roughly liberal economics and

democracy—for development. Over the next 15-20 years, more developing countries may gravitate toward Beijing's state-centric model rather than the traditional Western model of markets and democratic political systems to increase the chances of rapid development and perceived political stability. While we believe a gap will remain, the enhanced role of the state in Western economies may also lessen the contrast between the two models.

In the Middle East, secularism, which also has been considered an integral part of the Western model, increasingly may be seen as out of place as Islamic parties come into prominence and possibly begin to run governments. As in today's Turkey, we could see both increased Islamization and greater emphasis on economic growth and modernization.

"China, particularly, offers an alternative model for political development in addition to demonstrating a different economic pathway."

The lack of any overarching ideology and the mix-and-match of some of the elements—for example Brazil and India are vibrant market democracies—means the state-centric model does not yet constitute anything like an alternative system and, in our view, is unlikely ever to be one. Whether China liberalizes both politically and economically over the next two decades is a particularly critical test for the long-term sustainability of an alternative to the traditional Western model. Although democratization probably will be slow and may have its own Chinese character, we believe the emerging middle class will press for greater political influence and accountability of those in charge, particularly if the central government falters in its ability to sustain economic growth or is unresponsive to growing "quality of life" issues such as increasing pollution or the need for health and education services. The government's own efforts to boost S&T and establish a "high tech" economy will increase incentives for greater openness to develop human capital at home and attract expertise and ideas from outside.

Historical patterns evinced by other energy producers suggest deflecting pressures for liberalization will be easier for Russian authorities. Traditionally, energy producers also have been able to use revenues to buy off political opponents; few have made the transition to democracy while their energy revenues remain strong.

A sustained plunge in the price of oil and gas would alter the outlook and increase prospects for greater political and economic liberalization in Russia.

Latin America: Moderate Economic Growth, Continued Urban Violence

Many Latin American countries will have achieved marked progress in democratic consolidation by 2025, and some of these countries will have become middle income powers. Others, particularly those that have embraced populist policies, will lag behind—and some, such as Haiti, will have become even poorer and still less governable. Public security problems will continue to be intractable—and in some cases unmanageable. Brazil will become the leading regional power, but its efforts to promote South American integration will be realized only in part. Venezuela and Cuba will have some form of vestigial influence in the region in 2025, but their economic problems will limit their appeal. Unless the United States is able to deliver market access on a permanent and meaningful basis, the US could lose its traditionally privileged position in the region, with a concomitant decline in political influence.

Steady economic growth between now and 2025—perhaps as high as 4 percent—will fuel modest decreases in poverty levels in some countries and a gradual reduction of the informal sector. Progress on critical secondary reforms, such as education, regressive tax systems, weak property rights, and inadequate law enforcement will remain incremental and spotty. The relative growing importance of the region as a producer of oil, natural gas, biofuels, and other alternative energy sources will spur growth in Brazil, Chile, Colombia, and Mexico, but state ownership and political turmoil will impede efficient development of energy resources. The economic competitiveness of Latin America will continue to lag behind Asia and some other fast growing areas.

Population growth in the region will be relatively moderate, but the rural poor and indigenous populations will continue to grow at a faster rate. Latin America will have a graying population as the growth rate of adults aged 60 and over rises.

Parts of Latin America will continue to be among the world's most violent areas. Drug trafficking organizations, sustained in part by increased local drug consumption, transnational criminal cartels, and local crime rings and gangs, will continue to undermine public security. These factors, and persistent weaknesses in the rule of law, will mean that a few small countries, especially in Central America and the Caribbean, will verge on becoming failed states.

Latin America will continue to play a marginal role in the international system, except for its participation in international trade and some peacekeeping efforts.

US influence in the region will diminish somewhat, in part because of Latin America's broadening economic and commercial relations with Asia, Europe, and other blocs. Latins, in general, will look to the United States for guidance both globally and for relations with the region. An increasingly numerous Hispanic population will ensure greater US attention to, and involvement in, the culture, religion, economics, and politics of the region.

Women as Agents of Geopolitical Change

Economic and political empowerment of women could transform the global landscape over the next 20 years. This trend already is evident in the area of economics: ***The explosion in global economic productivity in recent years has been driven as much by fostering human resources—particularly through improvements in health, education, and employment opportunities for women and girls—as by technological advances***.

- The predominance of women in Southeast Asia's export manufacturing sector is a likely key driver of that region's economic success; women agricultural workers account for half the world's food production—even without reliable access to land, credit, equipment, and markets.

- Over the next 20 years the increased entry and retention of women in the workplace may continue to mitigate the economic impacts of global aging.

Women in much of Asia and Latin America are achieving higher levels of education than men, a trend that is particularly significant in a human capital-intensive global economy.

- Demographic data indicate a significant correlation between a higher level of female literacy and more robust GDP growth within a region (e.g., the Americas, Europe, and East Asia). Conversely, those regions with the lowest female literacy rates (southern and western Asia; the Arab world; and Sub-Saharan Africa) are the poorest in the world.

- Improved educational opportunities for girls and women also are a contributing factor to falling birth rates worldwide—and by extension better maternal health. The long-term implications of this trend likely include fewer orphans, less malnutrition, more children in school, and other contributions to societal stability.

Although data on women's ***political*** involvement are less conclusive than those regarding economic participation, political empowerment of women appears to change governmental priorities. ***Examples as disparate as Sweden and Rwanda indicate that countries with relatively large numbers of politically active women place greater importance on societal issues such as healthcare, the environment, and economic development.*** If this trend continues over the next 15-20 years, as is likely, an increasing number of countries could favor social programs over military ones. Better governance also could be a spinoff benefit, as a high number of women in parliament or senior government positions correlates with lower corruption.

Nowhere is the role of women potentially more important for geopolitical change than in the Muslim World. Muslim women do far better assimilating in Europe than their male relatives, partly because they flourish in the educational system, which facilitates their entry into jobs in information or service industries. Sharply declining fertility rates among Muslims in Europe demonstrate this willingness to accept jobs outside the home and a growing refusal to conform to traditional norms. In the short term, the decline of traditional Muslim family structures may help explain the openness of many young Muslim men to radical Islamic messages. However, in

(Continued on next page…)

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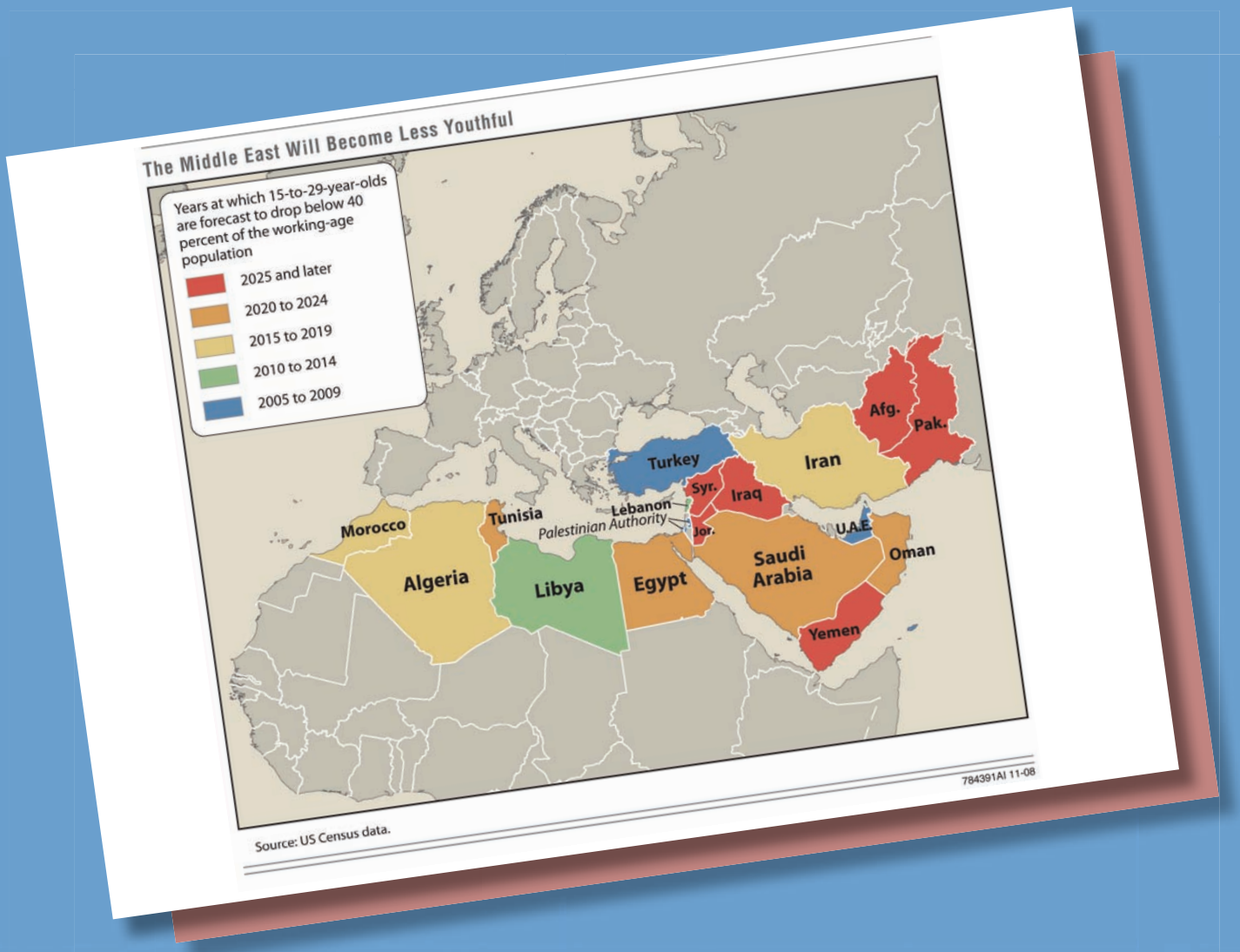
rearing future generations, women might help show the way to greater social assimilation and reduce the likelihood of religious extremism. The impact of growing numbers of women in the workplace may also have an impact outside Europe. The modernizing countries of the Islamic Mediterranean have close ties to Europe, to which these countries have sent many migrants. Migrants return to visit or resettle and bring with them new ideas and expectations. These Islamic countries also receive foreign influences from European mass media, through satellite dishes and the Internet.

Higher Education Shaping the Global Landscape in 2025

As global business grows increasingly borderless and labor markets more seamless, education has become a key determinant of countries' economic performance and potential. Adequate primary education is essential, but the quality and accessibility of secondary and higher education will be even more important for determining whether societies successfully graduate up the value-added production ladder.

The US lead in highly skilled labor will likely narrow as large developing countries, particularly China, begin to reap dividends on recent investments in human capital, including education but also nutrition and healthcare. India faces a challenge because inadequate primary education is widespread in the poorer regions and top-flight educational institutions cater to a relatively privileged few. Funding as a proportion of GDP has grown to around 5 percent in most European countries, although few European universities are rated as world class. Spending on education in the Arab world is roughly on par with the rest of the world in absolute terms and surpasses the global mean as a percentage of GDP, lagging only slightly behind OECD high-income countries. UN data and research findings by other institutions suggest, however that training and education of Middle Eastern youth is not driven by the needs of employers, especially for science and technology. There are some signs of progress.

The US may be uniquely able to adapt its higher education and research system to rising global demand and position itself as a world education hub for the growing number of students that will enter the education market out to 2025. Although further opening of US classrooms and laboratories could mean greater competition for US students, the US economy would likely benefit because companies tend to base their operations near available human capital. Continued export of US educational models with the building of US campuses in the Middle East and Central Asia could boost the attractiveness and global prestige of US universities.



Chapter 2

The Demographics of Discord

Trends in birth, death, and migration are changing the absolute and relative size of young and old, rural and urban, and ethnic majority and minority populations within and among emerging and established powers. These demographic reconfigurations will offer social and economic opportunities for some powers and severely challenge established arrangements in others. The populations of more than 50 countries will increase by more than a third (some by more than two-thirds) by 2025, placing additional stresses on vital natural resources, services, and infrastructure. Two-thirds of these countries are in Sub-Saharan Africa; most of the remaining fast-growing countries are in the Middle East and South Asia.

Populations Growing, Declining, and Diversifying—at the Same Time

World population is projected to grow by about 1.2 billion between 2009 and 2025—from 6.8 billion to around 8 billion people. Although the global population increase is substantial—with concomitant effects on resources—the rate of growth will be slower than it was, down from levels that added 2.4 billion persons between 1980 and today. Demographers project that Asia and Africa will account for most of the population growth out to 2025 while less than 3 percent of the growth will occur in the "West"—Europe, Japan, the United States, Canada, Australia, and New Zealand. In 2025, roughly 16 percent of humanity will live in the West, down from the 18 percent in 2009 and 24 percent in 1980.

- The largest increase will occur in India, representing about one-fifth of all growth. India's population is projected to climb by around 240 million by 2025, reaching approximately 1.45 billion people. From 2009 to 2025, Asia's other giant, China, is projected to add more than 100 million to its current population of over 1.3 billion. (See graphic on page 22.)

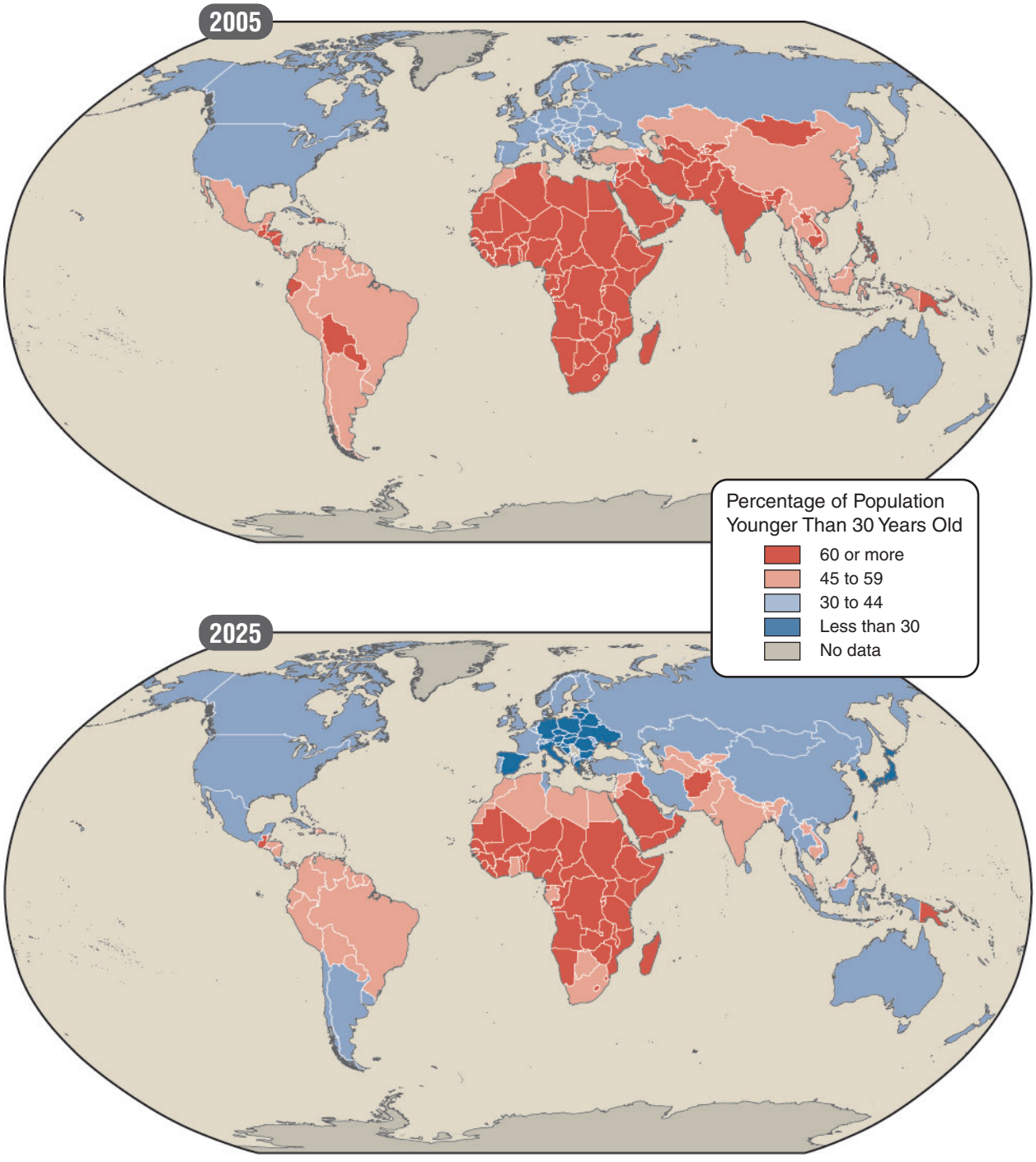
- In aggregate, the countries of Sub-Saharan Africa are projected to add about 350 million people during the same period, while those in Latin America and the Caribbean will increase by about 100 million.

- Between now and 2025, Russia, Ukraine, Italy, almost all countries in Eastern Europe, and Japan are expected to see their populations decline by several percent. These declines could approach or exceed 10 percent of the current populations in Russia, Ukraine, and a few other Eastern European countries.

- The populations of the US, Canada, Australia, and a few other industrial states with relatively high immigration rates will continue to grow—the US by more than 40 million, Canada by 4.5 million, and Australia by more than 3 million.

By 2025, the already diverse array of national population age structures promises to be more varied than ever, and the gap between the youngest and oldest profiles will continue to widen. The "oldest" countries—those in which people under age 30 form less than one-third of the population—will mark a band across the northern edge of the world map. In contrast, the "youngest" countries, where the under-30 group represents 60 percent of the population or more, will nearly all be located in Sub-Saharan Africa. (See maps on page 20.)

World Age Structure, 2005 and Projected 2025



Source: US Census data.

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The Pensioner Boom: Challenges of Aging Populations

Population aging has brought today's developed countries—with a few exceptions such as the US—to a demographic "***tipping point***." Today, nearly 7 out of every 10 people in the developed world are in the traditional working years (ages 15 to 64)—a high-tide mark. This number has never before been so high and, according to experts, in all likelihood will never be so high again.

In almost every developed country, the period of most rapid growth in the ratio of seniors (age 65 and older) to the working-age population will occur during the 2010s and 2020s, boosting the fiscal burden of old-age benefit programs. By 2010, there will be about one senior for every four working-age people in the developed world. By 2025, this ratio will have climbed to one to three, and possibly higher.

- Japan is in a difficult position: its working-age population has been contracting since the mid-1990s and its overall population since 2005. Today's projections envision a society in which, by 2025, there will be one senior for every two working-age Japanese.

- The picture for Western Europe is more mixed. The UK, France, Belgium, the Netherlands, and the Nordics will likely maintain the highest fertility rates in Europe but will remain below two children per woman. In the rest of the region, fertility probably will stay below 1.5 children per woman, on par with Japan (and well below the replacement level of 2.1 children per woman).

Large and sustained increases in the fertility rate, even if they began now, would not reverse the aging trend for decades in Europe and Japan. If fertility rose immediately to the replacement level in Western Europe, the ratio of seniors to people in their working years would continue to rise steadily through the late 2030s. In Japan, it would continue to rise through the late 2040s.

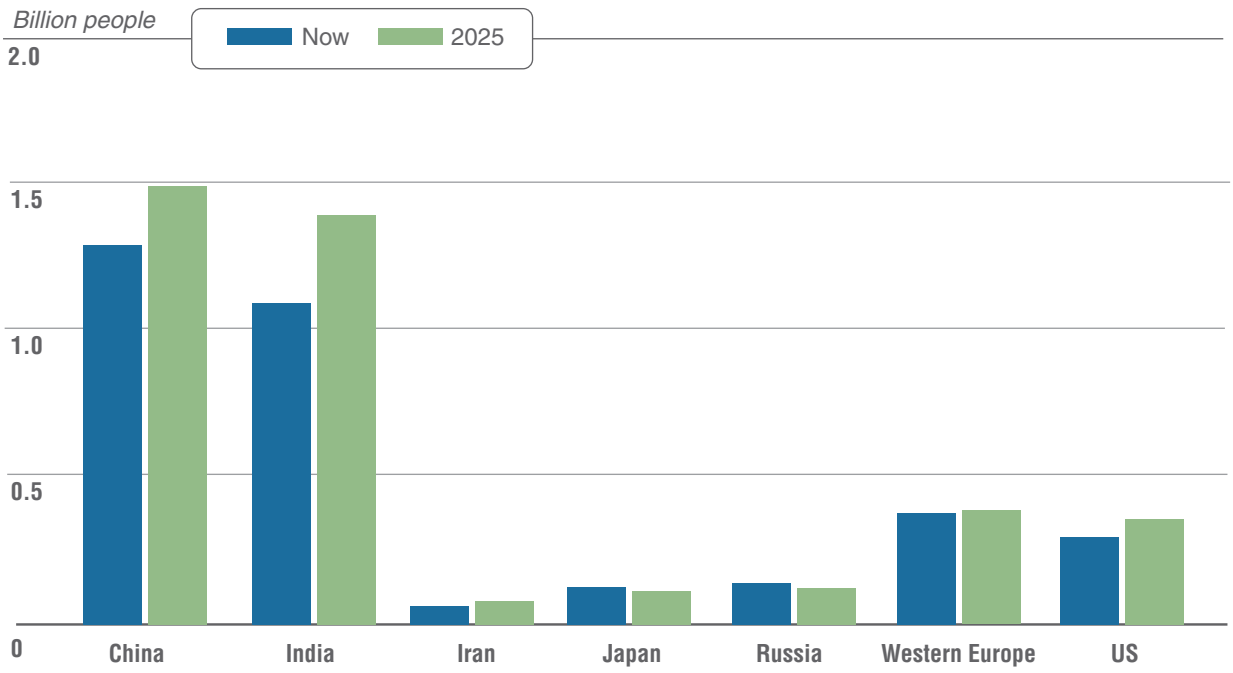
The annual level of net immigration would have to double or triple to keep working-age populations from shrinking in Western Europe. By 2025, non-European minority populations could reach significant proportions—15 percent or more—in nearly all Western European countries and will have a substantially younger age structure than the native population (see page 20). Given growing discontent with current levels of immigrants among native Europeans, such steep increases are likely to heighten tensions.

The aging of societies will have economic consequences. Even with productivity increases, slower employment growth from a shrinking work force probably will reduce Europe's already tepid GDP growth by 1 percent. By the 2030s, Japan's GDP growth is projected to drop to near zero according to some models. The cost of trying to maintain pensions and health coverage will squeeze out expenditures on other priorities, such as defense.

Persistent Youth Bulges

Countries with youthful age structures and rapidly growing populations form a crescent stretching from the Andean region of Latin America across Sub-Saharan Africa, the Middle East and the Caucasus, and then through the northern parts of South Asia. By 2025, the number of countries in this "arc of instability" will have decreased by 35 to 40 percent owing to declining fertility and maturing populations. Three quarters of the three dozen "youth bulge countries" projected to linger beyond 2025 will be located in Sub-Saharan Africa. The remainder will be

Total Population



Source: US Census Data

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located in the Middle East and scattered across Asia and among the Pacific Islands.

- The emergence of new economic tigers by 2025 could occur where youth bulges mature into "worker bulges." Experts argue that this demographic bonus is most advantageous when the country provides an educated work force and a business-friendly environment for investment. Potential beneficiaries include Turkey, Lebanon, Iran, and the Maghreb states of North Africa (Morocco, Algeria and Tunisia), Colombia, Costa Rica, Chile, Vietnam, Indonesia, and Malaysia.

- The current youth bulges in the Maghreb states, Turkey, Lebanon, and Iran will diminish rapidly but those in the West Bank/Gaza, Iraq, Yemen, Saudi Arabia and adjacent Afghanistan and Pakistan will persist through 2025. Unless employment conditions change dramatically, youth in weak states will continue to go elsewhere—externalizing volatility and violence.

The populations of already parlous youth-bulge states—such as Afghanistan, Democratic Republic of Congo (DROC), Ethiopia, Nigeria, Pakistan, and Yemen—are projected to remain on rapid-growth trajectories. Pakistan's and Nigeria's populations are each projected to grow by about 55 million people. Ethiopia and DROC will likely add about 40 million each, while the populations of Afghanistan and Yemen are projected to grow more than 50 percent larger than today's. All will retain age structures with large proportions of young

The Impact of HIV/AIDS

Neither an effective HIV vaccine nor a self-administered microbicide, even if developed and tested before 2025, will likely be widely disseminated by then. Although prevention efforts and local behavioral changes will depress infection rates globally, experts expect HIV/AIDS to remain a global pandemic through 2025 with its epicenter of infection in Sub-Saharan Africa. Unlike today, the vast majority of people living with HIV will have access to life-extending anti-retroviral therapies.

- If prevention efforts and effectiveness remain at current levels, the HIV-positive population is expected to climb to around 50 million by 2025—up from 33 million today (22 million in Sub-Saharan Africa). In this scenario, 25 million to 30 million people would need anti-retroviral therapy to survive during 2025.

- In another scenario assuming fully scaled-up prevention by 2015, the HIV-infected population would peak and then fall to near 25 million worldwide by 2025, bringing the number needing anti-retroviral therapy to between 15 and 20 million people.

adults, a demographic feature that is associated with the emergence of political violence and civil conflict.

Changing Places: Migration, Urbanization and Ethnic Shifts

Moving Experiences. The net migration of people from rural to urban areas and from poorer to richer countries likely will continue apace in 2025, fueled by a widening gap in economic and physical security between adjacent regions.

- Europe will continue to attract migrants from younger, less developed, and faster growing African and Asian regions nearby. However, other emerging centers of industrialization—China and southern India and possibly Turkey and Iran—could attract some of this labor migration as growth among their working-age populations slows and wages rise.

- Labor migration to the United States probably will slow as Mexico's industrial base grows and its population ages—a response to rapid fertility declines in the 1980s and 1990s—and as competing centers of development arise in Brazil and the southern cone of South America.

Urbanization. If current trends persist, by 2025 about 57 percent of the world's population will live in urban areas, up from about 50 percent today. By 2025, the world will add another eight megacities to the current list of 19—all except one of these eight will be in Asia and Sub-Saharan Africa. Most urban growth, however, will occur in smaller cities of these regions, which are expanding along highways and coalescing near crossroads and coastlines, often without formal sector job growth and without adequate services.

Identity Demography. Where ethno-religious groups have experienced their transition to lower birth rates at varying paces, lingering ethnic youth bulges and shifts in group proportions could trigger significant political changes. Shifts in ethno-religious composition resulting from migration also could fuel political change, particularly where immigrants settle in low-fertility industrialized countries.

- Differing rates of growth among Israel's ethnic communities could abet political shifts in the Knesset (Israel's parliament).

By 2025, Israeli Arabs, who currently comprise a fifth of the population, will comprise about a quarter of Israel's expected population of nearly 9 million. Over the same period, Israel's ultra-orthodox Jewish community could nearly double, becoming larger than 10 percent of the population.

- Irrespective of their political status in 2025, the populations of the West Bank, currently about 2.6 million people, and Gaza, now at 1.5 million, will have grown substantially: the West Bank by nearly 40 percent; Gaza by almost 60 percent. Their combined population in 2025—still youthful, growing, and approaching 6 million (or exceeding that figure, according to some projections)—promises to introduce further challenges to institutions hoping to generate adequate employment and public services, maintain sufficient availability of fresh water and food, and achieve political stability.

A number of other ethnic shifts between now and 2025 will have regional implications. For example, growing proportions of Native Americans in several Andean and Central American democracies are likely to continue to push governments in those countries toward populism. In Lebanon, ongoing fertility decline in the Shiite population, which currently lags ethnic neighbors in income and exceeds them in family size, will bring about a more mature age structure in this community—and could deepen Shiite integration into the mainstream of Lebanese economic and political life, easing communal tensions.

Western Europe has become the destination of choice for more than one million immigrants annually and home for more than 35 million foreign born—many from Muslim-majority countries in North Africa, the Middle East, and South Asia (see box on page 25). Immigration and integration politics, and confrontations with Muslim conservatives over education, women's rights, and the relationship between the state and religion are likely to strengthen right-of-center political organizations and splinter the left-of-center political coalitions that were instrumental in building and maintaining Europe's welfare states.

By 2025, international migration's human capital and technological transfer effects will begin to favor the most stable Asian and Latin American countries. Although the emigration of professionals probably will continue to deprive poor and unstable countries across Africa and parts of the Middle East of talent, the likely return of many wealthy and educated Asian and Latin Americans from the US and Europe will help boost the competitiveness of China, Brazil, India, and Mexico.

Demographic Portraits: Russia, China, India, and Iran

Russia: A Growing Multiethnic State?

Currently a country with around 141 million people, Russia's demographically aging and declining population is projected to drop below 130 million by 2025. The chances of stemming such a steep decline over this period are slim: the population of women in their 20s—their prime childbearing years—will be declining rapidly, numbering around 55 percent of today's count by 2025.

Russia's high rate of male middle-age mortality is unlikely to change dramatically. Muslim minorities that have maintained higher fertility will comprise larger proportions of the Russian population, as will Turkic and Chinese immigrants. According to some more conservative projections, the Muslim minority share of Russia's population will rise from 14 percent in 2005 to 19

Muslims in Western Europe

Western Europe's Muslim population currently totals between 15 and 18 million. The largest proportions of Muslims—between 6 and 8 percent—are in France (5 million) and the Netherlands (nearly 1 million), followed by countries with 4 to 6 percent: Germany (3.5 million), Denmark (300,000), Austria (500,000), and Switzerland (350,000). The UK and Italy also have relatively large Muslim populations, 1.8 million and 1 million respectively, though constituting less overall proportions (3 percent and 1.7 percent respectively). If current patterns of immigration and Muslim residents' above-average fertility continue, Western Europe could have 25 to 30 million Muslims by 2025.

Countries with growing numbers of Muslims will experience a rapid shift in ethnic composition, particularly around urban areas, potentially complicating efforts to facilitate assimilation and integration. Economic opportunities are likely to be greater in urban areas, but, in the absence of growth in suitable jobs, the increasing concentration could lead to more tense and unstable situations, such as occurred with the 2005 Paris surburban riots.

Slow overall growth rates, highly regulated labor markets, and workplace policies, if maintained, will make it difficult to increase job opportunities, despite Europe's need to stem the decline of its working-age population. When coupled with job discrimination and educational disadvantage, these factors are likely to confine many Muslims to low-status, low-wage jobs, deepening ethnic cleavages. Despite a sizeable stratum of integrated Muslims, a growing number—driven by a sense of alienation, grievance, and injustice—are increasingly likely to value separation in areas with Muslim-specific cultural and religious practices.

Although immigrant communities are unlikely to gain sufficient parliamentary representation to dictate either domestic or foreign policy agendas by 2025, Muslim-related issues will be a growing focus and shaper of the European political scene. Ongoing societal and political tension over integration of Muslims is likely to make European policymakers increasingly sensitive to the potential domestic repercussions of any foreign policies for the Middle East, including aligning too closely with the US on policies seen as pro-Israeli.

percent in 2030, and 23 percent in 2050. In a shrinking population, the growing proportion that are not Orthodox Slavs will likely provoke a nationalist backlash. Because Russia's fertility and mortality problems are likely to persist through 2025, Russia's economy—unlike Europe's and Japan's—will have to support the large proportion of dependents.

Antique China? By 2025, demographers expect China to have almost 1.4 billion people, nearly 100 million above its current population. The advantageous condition of having a relatively large working population and small proportions of both old-age and childhood dependents will begin to fade around 2015, when the size of China's working-age population will start to decline. Demographic aging—the onset of larger proportions of retirees and relatively fewer workers—is being accelerated by decades of policies that have limited childbirth and by a tradition of early retirement. By opting to slow population growth dramatically in order to dampen growing demand for energy, water,

and food, China is hastening the aging of its population. By 2025, a large proportion of China's population will be retired or entering retirement. Although China may over time reverse its restrictive policies on childbearing to achieve birth cohorts more closely balancing infant girls and boys, marriage-age adults in 2025 will still experience a significant male-dominated imbalance that will create a large pool of unmarried males.

Two Indias. India's current fertility rate of 2.8 children per woman masks vast differences between the low-fertility states of South India and the commercial hubs of Mumbai, Delhi, and Kolkata on the one hand, and the higher rates of populous states in the so-called Hindi-speaking belt across the north, where women's status is low and services lag. Largely owing to growth in India's densely populated northern states, its population is projected to overtake China's around 2025—just as China's population is projected to peak and begin a slow decline.

By then, India's demographic duality will have widened the gap between north and south. By 2025, much of India's work force growth will come from the most poorly educated, impoverished, and crowded districts of rural northern India. Although North Indian entrepreneurial families have lived for decades in southern cities, the arrival of whole communities of Hindi-speaking unskilled laborers looking for work could rekindle dormant animosities between India's central government and ethno-nationalist parties in the South.

Iran's Unique Trajectory. Having experienced one of the most rapid fertility declines in history—from more than six children per woman in 1985 to less than two today—Iran's population is destined for dramatic changes by 2025. The country's politically restless, job-hungry youth bulge will largely dissipate over the next decade, yielding more mature population and work force growth rates comparable to current rates in the US and China (near 1 percent per year). In this time frame, the working-age population will grow large relative to children, creating opportunities to accumulate savings, better educate, and eventually to shift to more technical industries and raise living standards. Whether Iran capitalizes on this demographic bonus depends on the country's political leadership, which at present is unfriendly to markets and private businesses, unsettling for investors, and more focused on oil revenues than on broader job creation.

Two additional demographic near-certainties are apparent: first, despite low fertility, Iran's population of 66 million will grow to around 77 million by 2025. Second, by then, a new youth bulge (an echo produced by births during the current one) will be ascending—but in this one, 15-to-24 year olds will account for just one-sixth of those in the working age group compared to one third today. Some experts believe this echo bulge signals a resurgence of revolutionary politics. Others speculate that, in the more educated and developed Iran of 2025, young adults will find career and consumption more attractive than extremist politics. Only one aspect of Iran's future is sure: its society will be more demographically mature than ever before and strikingly different than its neighbors.

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Chapter 3
The New Players

By 2025, the United States will find itself in the position of being one of a number of important actors on the world stage, albeit still the most powerful one. The relative political and economic clout of many countries will shift by 2025, according to an International Futures model measuring GDP, defense spending, population, and technology for individual states (see graphic on page 28).[6] Historically, *emerging* multipolar systems have been more unstable than bipolar or even unipolar ones; the greater diversity and growing power of more countries portends less cohesiveness and effectiveness for the international system. Most emerging powers already want a greater say and, along with many Europeans, dispute the notion of any one power having the right to be a hegemon. The potential for less cohesiveness and more instability also is suggested by the relatively steeper declines in national power of Europe and Japan.

Although we believe chances are good that China and India will continue to rise, their ascent is not guaranteed and will require overcoming high economic and social hurdles. Because of this, both countries are likely to remain inwardly focused and per capita wealth will lag substantially behind Western economies throughout the period to 2025 and beyond. Individuals in these emerging economic powerhouses are likely to feel still poor in relation to Westerners even though their collective GDP increasingly will outdistance those of individual Western states. For Russia, remaining in the top tier where it has been since its remarkable resurgence during the late 1990s and early part of the 21st century may be extremely difficult. Demography is not always destiny, but diversifying the economy so that Russia can maintain its standing after the world transitions away from dependence on fossil fuel will be central to its long-term prospects. Europe and Japan also will be confronting demographic challenges; decisions taken now are likely to determine their long-term trajectories.

Although the rise of no other state can equal the impact of the rise of such populous states as China and India, other countries with potentially high-performing economies—Iran, Indonesia, and Turkey, for example—could play increasingly important roles on the world stage and especially for establishing new patterns in the Muslim world.

"Few countries are poised to have more impact on the world over the next 15-20 years than China."

Rising Heavyweights: China and India

China: Facing Potential Bumps in the Road. Few countries are poised to have more impact on the world over the next 15-20 years than China. If current trends persist, by 2025 China will have the world's second largest economy and will be a leading military power. It could also be the largest importer of natural resources and an even greater polluter than it is now.

- US security and economic interests could face new challenges if China becomes a peer competitor that is militarily strong as well as economically dynamic and energy hungry.

The pace of China's economic growth almost certainly will slow, or even recede, even with additional reforms to address mounting social pressures arising from growing income disparities, a fraying social safety net, poor business regulation, hunger for foreign

[6] National Power scores are the product of an index combining the weighted factors of GDP, defense spending, population, and technology. Scores are calculated by the International Futures computer model and are expressed as a state's relative share (percentage) of all global power.

energy, enduring corruption, and environmental devastation. Any of these problems might be soluble in isolation, but the country could be hit by a "perfect storm" if many of them demand attention at the same time. Even if the Chinese Government can manage to address these issues, it will not have the ability to assure high levels of economic performance. Most of China's economic growth will continue to be domestically driven, but key sectors rely on foreign markets, resources, and technology as well as globalized production networks. As a result, China's economic health will be affected by that of other economies—particularly the United States and the EU.

In addressing these challenges, Chinese leaders must balance the openness necessary to sustain economic growth—essential to public tolerance for the Communist Party's monopoly of political power—against the restrictions necessary to protect that monopoly. Facing so many social and economic changes, the Communist Party and its position are likely to undergo further transformations. Indeed, Communist Party leaders themselves talk openly about the need to find new ways to retain public acceptance of the Party's dominant role. So far, however, these efforts do not appear to include opening the system to free elections and a free press. Moreover, barring the "perfect storm" described above, we do not foresee social pressures forcing real democracy in China by 2025. That said, the country could be moving toward greater political pluralism and more accountable governance.

Chinese leaders could, however, continue managing tensions by achieving significant growth without jeopardizing the Party's political monopoly, as they have for the past three decades. Although a protracted slump could pose a serious political threat, the regime would be tempted to deflect public criticism by blaming China's woes on foreign interference, stoking the more virulent and xenophobic forms of Chinese nationalism.

- Historically, people who become accustomed to rising living standards react angrily when their expectations are no longer met, and few people have had grounds for such high expectations as do the Chinese.

- China's international standing is based partly on foreigners' calculations that it is "the country of the future." If foreigners treat the country less deferentially, nationalistic Chinese could respond angrily.

India: A Complicated Rise. Over the next 15-20 years, Indian leaders will strive for a multipolar international system, with New Delhi as one of the poles and serving as a political and cultural bridge between a rising China and the United States. India's growing international confidence, derived primarily from its economic growth and its successful democratic record, now drives New Delhi toward partnerships with many countries. However, these partnerships are aimed at maximizing India's autonomy, not at aligning India with any country or international coalition.

India probably will continue to enjoy relatively rapid economic growth. Although India faces lingering deficiencies in its domestic infrastructure, skilled labor, and energy production, we expect the nation's rapidly expanding middle class, youthful population, reduced reliance on agriculture, and high domestic savings and investment rates to propel continued economic growth. India's impressive economic growth over the past 15 years has reduced the number of people living in absolute poverty, but the

growing gap between rich and poor will become a more important political issue.

We believe Indians will remain strongly committed to democracy, but the polity could become more fragmented and fractious, with national power being shared across successive political coalitions. Future elections are likely to be multi-sided affairs yielding awkward coalitions with unclear mandates. The general direction of India's economic policymaking is unlikely to be reversed, but the pace and scale of reform will fluctuate.

Regional and ethnic insurgencies that have plagued India since independence are likely to persist, but they will not threaten India's unity. We assess New Delhi will remain confident that it can contain the Kashmiri separatist movement. However, India is likely to experience heightened violence and instability in several parts of the country because of the growing reach of the Maoist Naxalite movement.

Indian leaders do not see Washington as a military or economic patron and now believe the international situation has made such a benefactor unnecessary. New Delhi will, however, pursue the benefits of favorable US ties, partly, too, as a hedge against any development of hostile ties with China. Indian policymakers are convinced that US capital, technology, and goodwill are essential to India's continued rise as a global power. The United States will remain one of India's largest export destinations, the key to international financial institutions such as the World Bank and foreign commercial lending, and the largest source of remittances. The Indian diaspora—composed largely of highly skilled professionals—will remain a key element in deepening US-Indian ties. The Indian market for US goods will grow substantially as New Delhi reduces restrictions on trade and investment. India's military also will be eager to benefit from expanded defense ties with Washington. Indian leaders, however, probably will avoid ties that could resemble an alliance relationship.

"Russia has the potential to be richer, more powerful, and more self-assured in 2025….[but] multiple constraints could limit Russia's ability to achieve its full economic potential."

Other Key Players

Russia's Path: Boom or Bust. Russia has the potential to be richer, more powerful, and more self-assured in 2025 if it invests in human capital, expands and diversifies its economy, and integrates with global markets. On the other hand, multiple constraints could limit Russia's ability to achieve its full economic potential. Chief among them are a shortfall in energy investment, key infrastructure bottlenecks, decaying education and public health sectors, an underdeveloped banking sector, and crime and corruption. A sooner-than-expected conversion to alternative fuels or a sustained plunge in global energy prices before Russia has the chance to develop a more diversified economy probably would constrain economic growth.

Russia's population decline by 2025 will force hard policy choices. By 2017, for example, Russia is likely to have only 650,000 18-year-old males from which to maintain an army that today relies on 750,000 conscripts. Population decline also could take an economic toll with severe labor force shortages, particularly if Russia does not invest more in its existing human capital, rebuild its S&T base, and employ foreign labor migrants.

If Russia diversifies its economy, it could develop a more pluralistic, albeit not

democratic, political system—the result of institutional consolidation, a rising middle class, and the emergence of new stakeholders demanding a greater voice.

A more proactive and influential foreign policy seems likely, reflecting Moscow's reemergence as a major player on the world stage; an important partner for Western, Asian, and Middle East capitals; and a leading force in opposition to US global dominance. Controlling key energy nodes and links in the Caucasus and Central Asia—vital to its ambitions as an energy superpower—will be a driving force in reestablishing a sphere of influence in its Near Abroad. Shared perceptions regarding threats from terrorism and Islamic radicalism could align Russian and Western security policies more tightly, notwithstanding disagreements on other issues and a persisting "values gap."

The range of possible futures for Russia remains wide because of starkly divergent forces—liberal economic trends and illiberal political trends. The tension between the two trends—together with Russia's sensitivity to potential discontinuities sparked by political instability, a major foreign policy crisis, or other wild cards—makes it impossible to exclude alternative futures such as a nationalistic, authoritarian petro-state or even a full dictatorship, which is an unlikely but nevertheless plausible future. Less likely, Russia could become a significantly more open and progressive country by 2025.

Europe: Losing Clout in 2025. We believe Europe by 2025 will have made slow progress toward achieving the vision of current leaders and elites: a cohesive, integrated, and influential global actor able to employ independently a full spectrum of political, economic, and military tools in support of European and Western interests and universal ideals. The European Union would need to resolve a perceived democracy gap dividing Brussels from European voters and move past the protracted debate about its institutional structures.

The EU will be in a position to bolster political stability and democratization on Europe's periphery by taking in additional new members in the Balkans, and perhaps Ukraine and Turkey. However, continued failure to convince skeptical publics of the benefits of deeper economic, political, and social integration and to grasp the nettle of a shrinking and aging population by enacting painful reforms could leave the EU a hobbled giant distracted by internal bickering and competing national agendas, and less able to translate its economic clout into global influence.

The drop-off in working-age populations will prove a severe test for Europe's social welfare model, a foundation stone of Western Europe's political cohesion since World War II. Progress on economic liberalization is likely to continue only in gradual steps until aging populations or prolonged economic stagnation force more dramatic changes—a crisis point that may not hit before some time in the next decade and might be pushed off even further. There are no easy fixes for Europe's demographic deficits except likely cutbacks in health and retirement benefits, which most states have not begun to implement or even to contemplate. Defense expenditures are likely to be cut further to stave off the need for serious restructuring of social benefits programs. The challenge of integrating immigrant, especially Muslim, communities will become acute if citizens faced with a sudden lowering of expectations resort to more narrow nationalism and concentrate on parochial interests, as happened in the past.

Europe's strategic perspective is likely to remain narrower than Washington's, even if the EU succeeds in making reforms that create a "European President" and "European Foreign Minister" and develops greater institutional capacity for crisis management. Divergent threat perceptions within Europe and the likelihood that defense spending will remain uncoordinated suggest the EU will not be a major military power by 2025. The national interests of the bigger powers will continue to complicate EU foreign and security policy and European support for NATO could erode.

The question of Turkey's EU membership will be a test of Europe's outward focus between now and 2025. Increasing doubts about Turkey's chances are likely to slow its implementation of political and human rights reforms. Any outright rejection risks wider repercussions, reinforcing arguments in the Muslim world—including among Europe's Muslim minorities—about the incompatibility of the West and Islam. Crime could be the gravest threat inside Europe as Eurasian transnational organizations—flush from involvement in energy and mineral concerns—become more powerful and broaden their scope. One or more governments in Eastern or Central Europe could fall prey to their domination.

Europe will remain heavily dependent on Russia for energy in 2025, despite efforts to promote energy efficiency and renewable energy and lower greenhouse gas emissions. Varying levels of dependence, differing perspectives on Russia's democratic maturity and economic intentions, and failure to achieve consensus on Brussels' role are hampering nascent efforts to develop common EU polices on energy diversification and security. In the absence of a collective approach that would reduce Russia's leverage, this dependence will foster constant attentiveness to Moscow's interests by key countries, including Germany and Italy, who see Russia as a reliable supplier. Europe could pay a price for its heavy dependence, especially if Russian firms are unable to fulfill contract commitments because of underinvestment in their natural gas fields or if growing corruption and organized criminal involvement in the Eurasian energy sector spill over to infect Western business interests.

Japan: Caught Between the US and China. Japan will face a major reorientation of its domestic and foreign policies by 2025 yet maintain its status as an upper middle rank power. Domestically, Japan's political, social, and economic systems will likely be restructured to address its demographic decline, an aging industrial base, and a more volatile political situation. Japan's decreasing population may force authorities to consider new immigration policies like a long-term visa option for visiting workers. The Japanese, however, will have difficulty overcoming their reluctance to naturalize foreigners. The aging of the population also will spur development in Japan's healthcare and housing systems to accommodate large numbers of dependent elderly.

The shrinking work force—and Japan's cultural aversion to substantial immigrant labor—will put a major strain on Japan's social services and tax revenues, leading to tax increases and calls for more competition in the domestic sector to lower the price of consumer goods. We anticipate continued restructuring of Japan's export industries, with increased emphasis on high technology products, value-added production, and information technologies. The shrinking of Japan's agricultural sector will continue, perhaps down to just 2 percent of the labor force, with a corresponding increase in payments for food imports. The working-age population, declining in absolute numbers,

includes a large number of unemployed and untrained citizens in their late teens and 20s. This could lead to a shortage of white collar workers.

With increasing electoral competition, Japan's one-party political system probably will fully disintegrate by 2025. The Liberal Democratic Party may split into a number of contending parties, but it is more likely that Japan will witness a continual splitting and merging of competing political parties, leading to policy paralysis.

On the foreign front, Japan's policies will be influenced most by the policies of China and the United States, where four scenarios are possible.

- In the first scenario, a China that continues its current economic growth pattern will be increasingly important to Japan's economic growth, and Tokyo will work to maintain good political relations and increase market access for Japanese goods. Tokyo may seek a free trade agreement with Beijing well before 2025. At the same time, China's military power and influence in the region will be of increasing concern to Japanese policymakers. Their likely response will be to draw closer to the United States, increase their missile defense and anti-submarine warfare capabilities, seek to develop regional allies such as South Korea, and push for greater development of international multilateral organizations in East Asia, including an East Asian Summit.

- In a second scenario, China's economic growth falters or its policies become openly hostile toward countries in the region. In response, Tokyo would likely move to assert its influence, in part by seeking to rally democratic states in East Asia, and in part by continuing to develop its own national power through advanced military hardware. Tokyo would assume strong support from Washington in this circumstance and would move to shape political and economic forums in the region to isolate or limit Chinese influence. This would cause states in the region to make a difficult choice between their continued unease with Japanese military strength and a China that has the potential to dominate nearly all nations near its borders. As a result, Japan might find itself dealing with an ad-hoc non-aligned movement of East Asian states seeking to avoid being entrapped by either Tokyo or Beijing.

- In a third scenario, should the United States' security commitment to Japan weaken or be perceived by Tokyo as weakening, Japan may decide to move closer to Beijing on regional issues and ultimately consider security arrangements that give China a de facto role in maintaining stability in ocean areas near Japan. Tokyo is highly unlikely to respond to a loss of the US security umbrella by developing a nuclear weapons program, short of clearly aggressive intent by China toward Japan.

- A fourth scenario would see the United States and China move significantly toward political and security cooperation in the region, leading to US accommodation of a Chinese military presence in the region and a corresponding realignment or drawdown of US forces there. In this case, Tokyo almost certainly would follow the prevailing trend and move closer to Beijing to be included in regional security and political arrangements. Similarly, others in the region, including South Korea, Taiwan, and ASEAN members likely would follow such a US lead, putting further pressure on Tokyo to align

its policies with those of the other actors in the region.

Brazil: Solid Foundation for an Enhanced Leadership Role. By 2025 Brazil probably will be exercising greater regional leadership, as first among equals in South American fora, but aside from its growing role as an energy producer and its role in trade talks, it will demonstrate limited ability to project beyond the continent as a major player in world affairs. Its progress in consolidating democracy and diversifying its economy will serve as a positive regional model.

The country's maturing commitment to democracy is on a secure footing with fair and open electoral processes and smooth transitions having become routine. The current President, Lula da Silva, has a strong socialist orientation and has pursued a moderate policy course domestically and internationally, setting a positive precedent for his successors. Brazilian views about the importance of playing a key role as both a regional and world leader have largely become ingrained in the national consciousness and transcend party politics.

Economically, Brazil has established a solid foundation for steady growth based on political stability and an incremental reform process. The growing consensus for responsible fiscal and monetary policy is likely to lessen the disruptions from crises that have plagued the country in the past. Dramatic departures from the current economic consensus in Brazil, either a radical turn toward a free-market and free trade-oriented economic model or a heavy-handed statist orientation, appear to be unlikely by 2025.

Brazil's recent preliminary finds of new, possibly large offshore oil deposits have the potential to add another dynamic to an already diversified economy and put Brazil on a more rapid economic growth path. The oil discoveries in the Santos Basin—potentially holding tens of billions of barrels of reserves—could make Brazil after 2020 a major oil exporter when these fields are fully exploited. Optimistic scenarios, which assume a legal and regulatory framework attractive to foreign investment, project oil rising to a 15 percent share of GDP by 2025; even then, petroleum would only complement existing sources of national wealth.

"The oil discoveries in the Santos Basin—potentially holding tens of billions of barrels of reserves—could make Brazil after 2020 a major oil exporter…"

Progress on social issues, such as reducing crime and poverty, will likely play a decisive role in determining Brazil's future leadership status. Without advances in the rule of law, even rapid economic growth will be undercut by the instability that results from pervasive crime and corruption. Mechanisms to incorporate a growing share of the population into the formal economy also will be needed to buttress Brazil's status as a modernizing world power.

Up-and-Coming Powers

Owing to the large populations and expansive landmasses of the new powers like India and China, another constellation of powerhouses is unlikely to erupt on the world scene over the next decade or two. However, up-and-coming developing states could account for an increasing proportion of the world's economic growth by 2025. Others also will play a dynamic role in their own neighborhoods.

Indonesia, Turkey and a post-clerically run **Iran—**states that are predominantly Islamic, but which fall outside the Arab core—appear well-situated for growing international roles. A growth-friendly macro-economic policy

climate would allow their natural economic endowments to flourish. In the case of Iran, radical political reform will be necessary.

Indonesia's performance will depend upon whether it can replicate its success at political reform with measures to spur the economy. In the past decade, Indonesians have transformed their once-authoritarian country into a democracy, turning the vast archipelago into a place of relative calm where support for moderate political solutions is strong, separatist movements are largely fading away, and terrorists, finding little public support, are increasingly found and arrested. With abundant natural resources and a large population of potential consumers (it is the world's fourth most populous country), Indonesia could rise economically if its elected leaders take steps to improve the investment climate, including strengthening the legal system, improving the regulatory framework, reforming the financial sector, reducing fuel and food subsidies, and generally lowering the cost of doing business.

Looking at **Iran**—a state rich in natural gas and other resources and high in human capital—political and economic reform in addition to a stable investment climate could fundamentally redraw both the way the world perceives the country and also the way in which Iranians view themselves. Under those circumstances, economic resurgence could take place quickly in Iran and embolden a latent cosmopolitan, educated, at times secular Iranian middle-class. If empowered, this portion of the population could broaden the country's horizons, particularly eastward and away from decades of being mired in the Arab conflicts of the Middle East.

Turkey's recent economic track record of increased growth, the vitality of Turkey's emerging middle class and its geostrategic locale raise the prospect of a growing regional role in the Middle East. Economic weaknesses such as its heavy dependence on external energy sources may help to spur it toward a greater international role as Turkish authorities seek to develop their ties with energy suppliers—including close neighbors Russia and Iran—and bolster its position as a transit hub. Over the next 15 years, Turkey's most likely course involves a blending of Islamic and nationalist strains, which could serve as a model for other rapidly modernizing countries in the Middle East.

Global Scenario I: *A World Without the West*

In this fictionalized account, the new powers supplant the West as leaders on the world stage. This is not inevitable nor the only possible outcome of the rise of new states. Historically the rise of new powers—such as Japan and Germany in the late 19th and early 20th centuries—presented stiff challenges to the existing international system, all of which ended in worldwide conflict. More plausible in our minds than a direct challenge to the international system is the possibility that the emerging powers will assume a greater role in areas affecting their vital interests, particularly in view of what may be growing burden fatigue for Western countries.

Such a coalition of forces could be a competitor to institutions like NATO, offering others an alternative to the West. As detailed, we do not see these alternative coalitions as necessarily permanent fixtures of the new landscape. Indeed, given their diverse interests and competition over resources, the newer powers could as easily distance themselves from each other as come together. Although the emerging powers are likely to be preoccupied with domestic issues and sustaining their economic development, increasingly, as outlined in this chapter, they will have the capacity to be global players.

Preconditions for this scenario include:

- Lagging Western growth prompts the US and Europe to begin taking protectionist measures against the faster-growing emerging powers.

- Different models of state-society relationships help underpin the powerful (albeit fragile) Sino-Russia coalition.

- Tensions between the principal actors in the multipolar world are high as states seek energy security and strengthened spheres of influence. The Shanghai Cooperation Organization (SCO), especially, seeks reliable and dependable clients in strategic regions—and Central Asia is in both Russia's and China's backyards.

上海合作组织

The Shanghai Cooperation Organisation

Шанхайскаяорганизациясотрудничества

Letter from Head of Shanghai Cooperation Organization
to Secretary-General of NATO
June 15, 2015

I know we meet tomorrow to inaugurate our strategic dialogue, but I wanted to share with you beforehand my thoughts about the SCO and how far we have come. Fifteen to 20 years ago, I would never have imagined the SCO to be NATO's equal—if not (patting myself on the back) an even somewhat more important international organization. Just between ourselves, we were not destined for "greatness" except for the West's stumbling.

I think it is fair to say it began when you pulled out of Afghanistan without accomplishing your mission of pacifying the Taliban. I know you had little choice. Years of slow or no growth in the US and West had decimated defense budgets. The Americans felt overstretched and the Europeans were not going to stay without a strong US presence. The Afghan situation threatened to destabilize the whole region, and we could not stand idly by. Besides Afghanistan, we had disturbing intelligence that some "friendly" Central Asian governments were coming under pressure from radical Islamic movements and we continue to depend on Central Asian energy. The Chinese and Indians were very reluctant to throw their hats into the ring with my homeland—Russia—but they did not have better options. None of us wanted the other guy to be in charge: we were so suspicious of each other and, if truth be told, continue to be.

The so-called SCO "peacekeeping" action really put the SCO on the map and got us off the ground. Before that, it was an organization where "cooperation" was a bit of a misnomer. It would have been more aptly called the "Shanghai Organization of Mutual Distrust." China did not want to offend the US, so it did not go along with Russia's anti-American efforts. India was there to keep an eye on both China and Russia. The Central Asians thought they could use the SCO for their own purpose of playing the neighboring big powers off against one another. Iran's Ahmedi-Nejad would have joined anything with a whiff of anti-Americanism.

Still, even with these operations, the SCO would not have become a "bloc" if it had not been for the rising antagonism shown by the US and Europe toward China. China's strong ties to the US had oddly enough provided Beijing with legitimacy. China also benefited from a strong US presence in the region; Beijing's Asian neighbors would have been much more worried about China's rise if they had not had the US as a hedge. China and India were content with the status quo and did not want to get into a strong alliance with us Russians for fear of antagonizing the US. As long as that status quo held, the SCO's prospects as a "bloc" were limited.

Then came the growing protectionist movements in the US and Europe led by a coalition of forces from left to right along the political spectrum. Chinese investments came under greater scrutiny and increasingly were denied. The fact that China and India became first adopters of so many new technologies—next generation Internet, clean water, energy storage, biogerontechnology, clean coal, and biofuels—only added to the

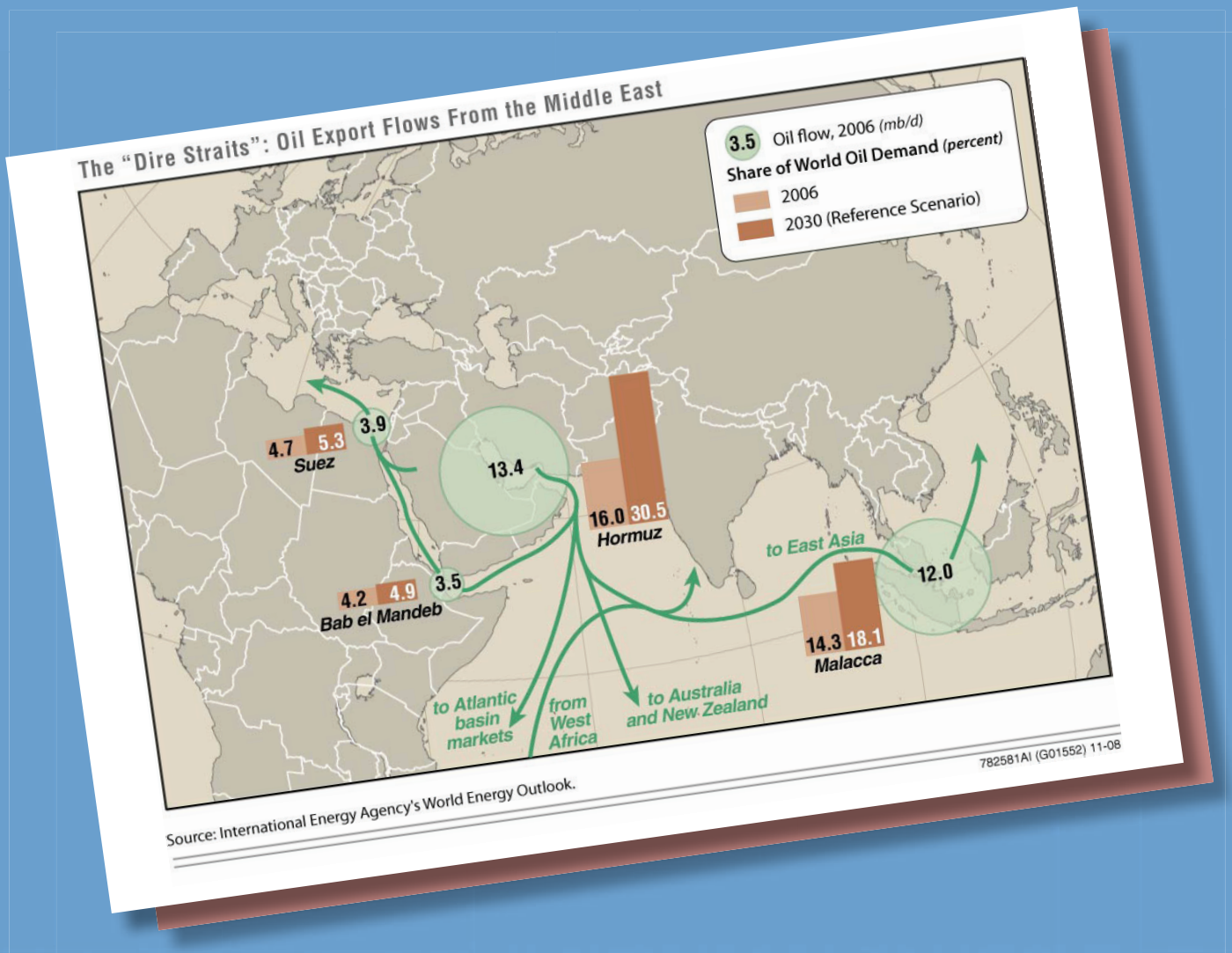
economic-driven frustration. Protectionist trade barriers were put up. Somebody other than “the West” had to pay a price for that recession which dragged on there but not so much elsewhere. China’s military modernization was seen as a threat and there was a lot of loose talk in the West about the emerging powers piggy-backing off the United States’ protection of the sea lanes. Needless to say, the West’s antagonism sparked a nationalistic movement in China.

Interestingly, we Russians watched this from the sidelines without knowing what to do. We were pleased to see our good friends in the West take an economic drubbing. It was still nothing like what we went through in the 1990s and, of course, we took a hit as energy prices sagged with the recession in the West. But we had accumulated a lot of reserves before then.

In the end, these events were a godsend because they forced Russia and China into each other’s arms. Before, Russia had been more distrustful of China’s rise than the United States. Yes, we talked big about shifting all our energy supplies eastward to scare the Europeans from time to time. But we also played China off against Japan, dangling possibilities and then not following through. Our main worry was China. Fears about China’s overrunning Russia’s Far East were a part of it, but I think the bigger threat from our standpoint was of a more powerful China—for example, one that would not forever hide behind Russia’s skirts at the UN. The Soviet-China split was always lurking too. I personally was angered by endless Chinese talk about not repeating Soviet mistakes. That hurt. Not that the Chinese weren’t right, but to admit we had failed when they might succeed—that struck at Russian pride.

But now this is all behind us. Having technology that allowed for the clean use of fossil fuels was a godsend. Whether the West gave it to us, or as we were accused of doing, we stole it, is immaterial. We saw a chance to cement a strong tie—offering the Chinese opportunities for a secure energy supply and less reliance on seaborne supplies from the Middle East. They reciprocated with long-term contracts. We also learned how to cooperate in Central Asia instead of trying to undermine each other by our actions with various regimes. Seeing a strong Sino-Russian partnership arise, the others—India, Iran, etc.—did not want to be left out of the picture and have rallied around us. Of course, it helps that US and European protectionists lumped India with China, so there really was not much left for them to do.

How stable is our relationship? Don’t quote me, but this is not a new Cold War. Sure, we talk a great game about state capitalism and authoritarianism, but it is no ideology like Communism. And it is in our mutual interests that democracy not break out in Central Asia as China and Russia would be the targets of any such uprisings. I can’t say that we Russians and Chinese really like each other much more than before. In fact, both of us have to worry about our respective nationalisms getting in the way of mutual interests. Let’s put it this way: the Russian and Chinese peoples are not enamored with one another. Russians want to be respected as Europeans, not Eurasians, and China’s elites are still in their hearts geared toward the West. But temporary expedients have been known to grow into permanence, you know?



Chapter 4

Scarcity in the Midst of Plenty?

The international system will be challenged by growing resource constraints at the same time that it is coping with the impact of new players. Access to relatively secure and clean energy sources and management of chronic food and water shortages will assume increasing importance for a growing number of countries during the next 15-20 years. Adding well over a billion people to the world's population by 2025 will itself put pressure on these vital resources. An increasing percentage of the world's population will be moving from rural areas to urban and developed ones to seek greater personal security and economic opportunity. Many—particularly in Asia—will be joining the middle class and will be seeking to emulate Western lifestyles, which involve greater per capita consumption of all these resources. Unlike earlier periods when resource scarcities loomed large, the significant growth in demand from emerging markets, combined with constraints on new production—such as the control exerted now by state-run companies in the global energy market—limits the likelihood that market forces alone will rectify the supply-and-demand imbalance.

The already stressed resource sector will be further complicated and, in most cases, exacerbated by climate change, whose physical effects will worsen throughout this period. Continued escalation of energy demand will hasten the impacts of climate change. On the other hand, forcibly cutting back on fossil fuel use before substitutes are widely available could threaten continued economic development, particularly for countries like China whose industries have not yet achieved high levels of energy efficiency. Technological advances and policy decisions around the world germane to greenhouse gas emissions over the next 15 years are likely to determine whether the globe's temperature ultimately rises more than 2 degree centigrade—the threshold at which effects are thought to be no longer manageable.

Food and water also are intertwined with climate change, energy, and demography. Rising energy prices increase the cost for consumers and the environment of industrial-scale agriculture and application of petrochemical fertilizers. A switch from use of arable land for food to fuel crops provides a limited solution and could exacerbate both the energy and food situations. Climatically, rainfall anomalies and constricted seasonal flows of snow and glacial melts are aggravating water scarcities, harming agriculture in many parts of the globe. Energy and climate dynamics also combine to amplify a number of other ills such as health problems, agricultural losses to pests, and storm damage. The greatest danger may arise from the convergence and interaction of many stresses simultaneously. Such a complex and unprecedented syndrome of problems could overload decisionmakers, making it difficult for them to take actions in time to enhance good outcomes or avoid bad ones.

The Dawning of a Post-Petroleum Age?

By 2025 the world will be in the midst of a fundamental energy transition—in terms of both fuel types and sources. Non-OPEC liquid hydrocarbon production (i.e., crude oil, natural gas liquids, and unconventionals such as tar sands) will not be able to grow commensurate with demand. The production levels of many traditional energy producers—Yemen, Norway, Oman, Colombia, the UK, Indonesia, Argentina, Syria, Egypt, Peru, Tunisia—are already in decline. Others' production levels—Mexico, Brunei, Malaysia, China, India, Qatar—have flattened. The number of countries capable of meaningfully expanding production will decline. Only six countries—Saudi Arabia, Iran, Kuwait, the UAE, Iraq (potentially), and

Russia—are projected to account for 39 percent of total world oil production in 2025. The major producers increasingly will be located in the Middle East, which contains some two-thirds of world reserves. OPEC production in the Persian Gulf countries is projected to grow by 43 percent during 2003-2025. Saudi Arabia alone will account for almost half of all Gulf production, an amount greater than that expected from Africa and the Caspian area combined.

A partial consequence of this growing concentration has been increased control of oil and gas resources by national oil companies. When the Club of Rome made its famous forecast of looming energy scarcities, the "Seven Sisters" still had a strong influence on global oil markets and production.[7] Driven by shareholders, they responded to price signals to explore, invest, and promote technologies necessary to increase production. By contrast, national oil companies have strong economic and political incentives to limit investment in order to prolong the production horizon. Keeping oil in the ground provides resources for future generations in oil states that have limited their economic options.

The number and geographic distribution of oil producers will decrease concurrent with another energy transition: the move to cleaner fuels. The prized fuel in the shorter term likely will be natural gas. By 2025, consumption of natural gas is expected to grow by about 60 percent, according to DoE/Energy Information Agency projections. Although natural gas deposits are not necessarily co-located with oil, they are highly concentrated. Three countries—Russia, Iran, and Qatar—hold over 57 percent of the world's natural gas reserves. Considering oil and natural gas together, two countries—Russia and Iran—emerge as energy kingpins. Nevertheless, North America (the US, Canada, and Mexico) is expected to produce an appreciable proportion—18 percent—of total world production by 2025.

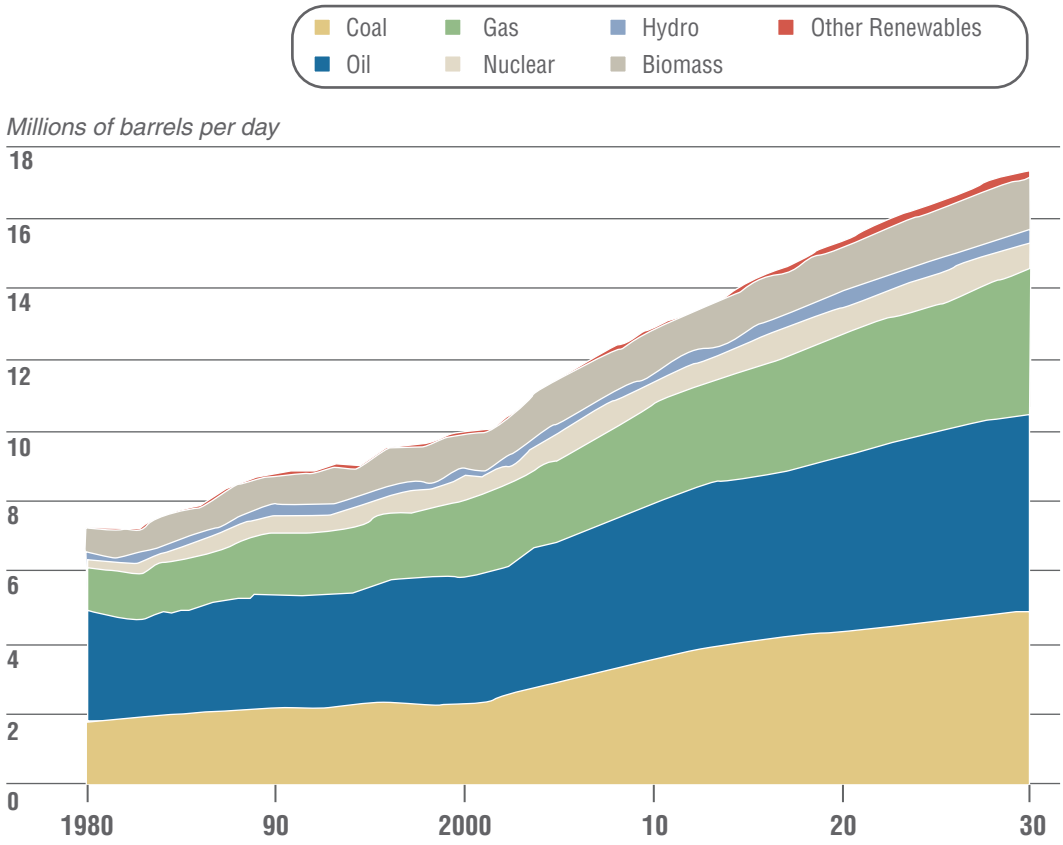
"Aging populations in the developed world; growing resource constraints in energy, food, and water; and worries about climate change are likely to color what will continue to be an historically unprecedented age of prosperity."

Even though the use of natural gas is likely to grow steadily in absolute terms, coal may be the fastest growing energy source despite being the "dirtiest." Rising prices for oil and natural gas would put a new premium on energy sources that are cheap, abundant, and close to markets. Three of the largest and fastest-growing energy consumers—the US, China, and India—and Russia possess the four largest recoverable coal reserves, representing 67 percent of known global reserves. Increased coal production could extend non-renewable carbon-based energy systems for one or even two centuries. China will still be very dependent on coal in 2025 and Beijing is likely to be under increasing international pressure to use clean technologies to burn it. China is overtaking the US in the amount of carbon emissions it puts in the atmosphere despite its much smaller GDP.

The use of nuclear fuel for electrical power generation is expected to expand, but the increase will not be sufficient to fill growing demand for electricity. Third-generation nuclear reactors have lower costs of power

[7] The "Seven Sisters" refers to seven Western oil companies that dominated mid-20th century oil production, refining, and distribution. With the formation and establishment of OPEC in the 1960s and 1970s, the Western oil companies' influence and clout declined.

Breakdown of Likely Energy Sources



Note: Global demand grows by more than half over the next quarter of a century, with coal use rising in absolute terms.

Source: PFC Energy International.

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generation, improved safety characteristics, and better waste and proliferation management features than previous reactor designs. Third-generation nuclear reactors are economically competitive at present electricity prices and are beginning to be deployed around the world. Although most nuclear power plants are currently in industrialized countries, growing demand for electricity in China, India, South Africa and other rapidly growing countries will increase the demand for nuclear power.

The supply of uranium, which is the principal feedstock for nuclear power, is unlikely to limit the future deployment of nuclear power. Available uranium is likely to be sufficient to support the expansion of nuclear energy without reprocessing well into the second half of the century. If uranium should prove to be in short supply, reactors capable of breeding nuclear fuels, along with recycling of used fuels, could continue to support the global expansion of nuclear energy.

However, because of its infrastructure requirements, concern over proliferation of nuclear expertise and material, and uncertainty over licensing and spent fuel

Timing is Everything

All current technologies are inadequate for replacing traditional energy architectures on the scale needed, and new energy technologies probably will not be commercially viable and widespread by 2025 (see foldout). The present generation of biofuels is too expensive to grow, would further boost food prices, and their manufacture consumes essentially the same amount of energy they produce. Other ways of converting nonfood biomass resources to fuels and chemical products should be more promising, such as those based on high-growth algae or agricultural waste products, especially cellulosic biomass. Development of clean coal technologies and carbon capture and storage is gaining momentum and—if such technologies were cost-competitive by 2025—would enable coal to generate more electricity in a carbon-constrained regulatory environment. Long-lasting hydrogen fuel cells have potential, but they remain in their infancy and are at least a decade away from commercial production. Enormous infrastructure investment might be required to support a "hydrogen economy." An Argonne National Laboratory study found that hydrogen, from well to tank, is likely to be at least twice as costly as gasoline.

Even with the favorable policy and funding environment that would be needed for biofuels, clean coal, or hydrogen, major technologies historically have had an "adoption lag." A recent study found that in the energy sector, it takes an average of 25 years for a new production technology to become widely adopted. A major reason for this lag is the need for new infrastructure to handle major innovation. For energy in particular, massive and sustained infrastructure investments made for almost 150 years encompass production, transportation, refining, marketing, and retail activities. Adoption of natural gas, a fuel superior to oil in many respects, illustrates the difficulty of a transition to something new. Technologies to use natural gas have been widely available since at least the 1970s, yet natural gas still lags crude oil in the global market because the technical and investment requirements for producing and transporting it are greater than they are for oil-based fuels.

Simply meeting baseline energy demand over the next two decades is estimated to require more than $3 trillion of investment in traditional hydrocarbons by companies built up over more than a century and with market capitalizations in the hundreds of billions of dollars. Because a new form of energy is highly unlikely to use existing infrastructure without modifications, we expect any new form of energy to demand similarly massive investment.

Despite what are seen as long odds now, we cannot rule out the possibility of a transition by 2025 that would avoid the costs of an infrastructure overhaul. The greatest possibility for a relatively quick and inexpensive transition during that period comes from better renewable generation sources (photovoltaic and wind) and improvements in battery technology. With many of these technologies, the infrastructure cost hurdle for individual projects would be lower, enabling many small economic actors to develop their own energy transformation projects that directly serve their interests—e.g., stationary fuel cells powering homes and offices, recharging plug-in hybrid autos, and selling energy back to the grid. Also, energy conversion schemes—such as plans to generate hydrogen for automotive fuel cells from electricity in a homeowner's garage—could avoid the need to develop complex hydrogen transportation infrastructure. Similarly, non-ethanol biofuels derived from genetically modified feed stocks may be able to leverage the considerable investment in liquid petroleum transport and distribution infrastructure.

processing, expansion of nuclear power generation by 2025 to cover anywhere near the increasing demand would be virtually impossible. The infrastructure (human and physical), legal (permitting), and construction hurdles are just too big. Only at the end of our 15-20 year period are we likely to see a serious ramp up of nuclear technologies.

The Geopolitics of Energy

Both high and low energy price levels would have major geopolitical implications and, over the course of 20 years, periods of both could occur. DoE's Energy Information Administration and several leading energy consultants believe higher price levels are likely, at least to 2015, because of plateauing supply and growing demand. These causes are unlike the case in 1970s and early 1980s when high oil prices were caused by an intentional restriction in supply. Even with the overall secular rise in energy costs, prices well below $100 a barrel are periodically likely with the expected increased volatility and need not come about as a result of technological breakthroughs and rapid commercialization of a substitute fuel. Plausible scenarios for a downward shift and change in market psychology include slowing global growth; increased production in Iraq, Angola, Central Asia, and elsewhere; and greater energy efficiencies with currently available technology.

"With high prices, major exporters such as Russia and Iran would have the financial resources to increase their national power…"

Even at prices below $100 a barrel, financial transfers connected with the energy trade produce clear winners and losers. Most of the 32 states that import 80 percent or more of their energy needs are likely to experience significantly slower economic growth than they might have achieved with lower oil prices. A number of these states have been identified by outside experts as at risk of state failure—the Central African Republic, DROC, Nepal, and Laos, for example. States characterized by high import dependence, low GDP per capita, high current account deficits, and heavy international indebtedness form a particularly perilous state profile. Such a profile includes most of East Africa and the Horn. Pivotal yet problem-beset countries, such as Pakistan, will be at risk of state failure.

With *higher prices*, more stable countries fare better but their prospects for economic growth would drop somewhat and political turbulence could occur. Efficient, service-sector oriented OECD economies are not immune but are harmed the least. China, though cushioned by its massive financial reserves, would be hit by higher oil prices, which would make lifting millions more out of poverty more difficult. China also would need to mine and transport more domestic coal, build more nuclear power plants, and seek to improve energy end-use efficiencies to offset the higher priced imports.

With high prices, major exporters such as Russia and Iran would have the financial resources to increase their national power. The extent and modalities of steps to increase their power and influence would depend on how they used their profits to invest in human capital, financial stabilization, and economic infrastructure. Judicious application of Russia's increased revenues to the economy, social needs, and foreign policy instruments would likely more than double Russia's standing as measured by an academic national power index.

A *sustained plunge in oil prices* would have significant implications for countries relying on robust oil revenues to balance the budget or build up domestic investment. For Iran, a

Winners and Losers in a Post-Petroleum World

We believe the most likely occurrence by 2025 is a technological breakthrough that will provide an alternative to oil and natural gas, but implementation will lag because of the necessary infrastructure costs and need for longer replacement time. However, whether the breakthrough occurs within the 2025 time frame or later, the geopolitical implications of a shift away from oil and natural gas will be immense.

- Saudi Arabia will absorb the biggest shock, as its leaders will be forced to tighten up on the costs of the royal establishment. The regime could face new tensions with the Wahabi establishment as Riyadh seeks to promote a series of major economic reforms—including women's full participation in the economy—and a new social contract with its public as it tries to institute a work ethic to accelerate development plans and diversify the economy.

- In Iran, the drop in oil and gas prices will undermine any populist economic policies. Pressure for economic reform will increase, potentially putting pressure on the clerical governing elite to loosen its grip. Incentives to open up to the West in a bid for greater foreign investment, establishing or strengthening ties with Western partners—including with the US—will increase. Iranian leaders might be more willing to trade their nuclear policies for aid and trade.

For Iraq, emphasis on investing in non-oil sectors of its economy will increase. The smaller Gulf states, which have been making massive investments designed to transform themselves into global tourist and transport hubs, are likely to manage the transition well, bolstered by their robust sovereign wealth funds (SWFs). Across the Arab world, SWFs are being deployed to develop non-oil sectors of the economy in a race against oil as a diminishing asset.

Outside the Middle East, Russia will potentially be the biggest loser, particularly if its economy remains heavily tied to energy exports, and could be reduced to middle power status. Venezuela, Bolivia, and other petro-populist regimes could unravel completely, if that has not occurred beforehand because of already growing discontent and decreasing production. Absent support from Venezuela, Cuba might be forced to begin China-like market reforms.

Early oil decline states—those exporters which had peaked or were declining as is currently the case with Indonesia and Mexico—may be better prepared to shift the focus of their economic activities and diversify into non-energy sectors.

Technology Breakthroughs[a] by 2025

Probable | Possible | Plausible

What Is the Technology?	**Ubiquitous computing** will be enabled by widespread tagging and networking of mundane objects (the Internet of Things) such as food packages, furniture, room sensors, and paper documents. Such items will be located and identified, monitored, and remotely controlled through enabling technologies—including Radio Frequency Identifications, sensor networks, tiny embedded servers, and energy harvesters—connected via the next-generation Internet using abundant, low cost, and high-power computing.	**Clean water technologies** comprise a range of technologies that enable faster and more energy efficient treatment of fresh water and waste water, and desalination of brackish and sea water, to provide sustainable and diverse water sources useable for domestic, agricultural, and industrial purposes. The technologies include advances in existing technologies such as membrane bioreactors and a range of materials' substitutions and advances in other separation and purification technologies driven by the unique chemical and physical properties of nanoparticles and nanofibers.	**Energy storage technology** encompasses a wide range of materials and techniques for storing energy, a necessity for the viability of many alternatives to fossil-fuel energy sources. Included are battery materials, ultracapacitors and hydrogen storage materials (particularly for fuel cells). Efficient energy storage will enable the on-demand energy component of a variety of systems such as hydrogen-based energy systems, a host of renewable (but intermittent) energy sources such as wind and solar, and low-emission transport vehicles.	"**Biogerontechnology**" is the science related to the study of the cellular and molecular basis of disease and aging applied to the development of new technological means for identifying and treating diseases and disabilities associated with old age. Supporting technologies include improvements in biosensors for real-time monitoring of human health, robust information technology, ubiquitous DNA sequencing and DNA-specific medicine, and fully targeted drug-delivery mechanisms.	**Clean coal technologies** include various combinations of carbon capture sequestration (CCS) to prohibit CO2—a byproduct of burning coal—from entering the atmosphere; coal conversion into syngas (gasification); and processes to convert syngas to hydrocarbons. CCS can reduce or possibly eliminate greenhouse gas emissions from a coal plant. Coal gasification improves efficiency when generating electricity and emits fewer pollutants relative to coal burning plants. The syngas also can be a feedstock for transportation fuels and industrial chemicals that replace petroleum-derived products.
What Are Drivers and Barriers?	**Key Drivers:** Demand for greater efficiency in a wide variety of applications from food safety to more efficient supply chains and logistics. Corporations, governments, and individuals will benefit in areas such as energy efficiency and security, quality of life, and early warning of equipment maintenance needs. **Key Barriers:** Implementation depends on availability of power for small, maintenance-free devices, development of profitable business models, and addressing likely major privacy and security concerns.	**Key Drivers:** Clean water is set to become the world's scarcest but most-needed natural resource because of new demands resulting from population increases and expectations that climate changes will reduce natural fresh water sources in some areas. Demand will increase for water for domestic use, as well as for agriculture (including new biopharma and biofuel crops) and industry processes. **Key Barriers:** The demand for sustainable clean water supplies will only be met if both large- and small-scale systems can overcome cost constraints—both in terms of energy requirements and infrastructure costs.	**Key Drivers:** High fossil fuel energy prices, the desire to reduce dependency on foreign energy sources, and pressure to increase renewable energy sources drive the development of these technologies. **Key Barriers:** Development and deployment of the technologies are restricted by material science, the unknown cost of large-scale manufacturing, and infrastructure investment costs.	**Key Drivers:** Aging populations, increasingly expensive medical costs, and the desire to keep older workers in the work force drive the development of these technologies. **Key Barriers:** Cost of development, lengthy human trials, privacy concerns, possible difficulties of insurance, and religious and social concerns will inhibit their development.	**Key Drivers:** The desire to reduce dependence on foreign energy sources drives interest in expanding the use of available coal reserves, while pressure for clean energy production requires development of CCS methods. **Key Barriers:** Substantial technology and cost barriers exist for CCS scale-up and implementation for coal power plants, while uncertainties in both the oil market and environmental regulatory landscape preclude investment in expensive coal gasification plants (even without CCS).
Why Is the Technology a Game-Changer?	These technologies could radically accelerate a range of enhanced efficiencies, leading to integration of closed societies into the information age and security monitoring of almost all places. Supply chains would be streamlined with savings in costs and efficiencies that would reduce dependence upon human labor.	Although the Earth contains a plentiful supply of water, only 1 percent is fit or available for human consumption and some 20 percent of the world's population does not have access to fresh drinking water. Regions experiencing water scarcity will increase as the global population increases and as climate change induced droughts occur. Both developing and developed countries will be affected. Various industries increasingly will compete for water, including agriculture, food, and beverage processing plants as well as chemical, pharmaceutical, and semiconductor industries. First movers to develop and deploy cheap energy-efficient clean-water technologies could gain huge geopolitical advantage.	The ability to store and use energy on demand from a combination of alternative energy sources offers a significant potential to lead a paradigm shift away from fossil fuels, resulting in significant global economic and social advantages to first commercializers. With widespread deployment, the result could be destabilizing to rentier economies dependant upon fossil fuels.	Deployment would shift the cost, allocation, and use of healthcare resources. Nations will be challenged as a result of the changing demographic structures and new psychologies, behaviors and activity patterns of aging yet healthy citizens and the concomitant need to formulate new national economic and social policies.	A successful accelerated and rapid deployment of clean coal technology could pose a major challenge to other hydrocarbon (predominately oil) energy markets and nascent renewable energy markets. This would change the dependency of coal rich/oil poor nations on imported oil/gas with a resulting significant shift in national interests.

[a]These breakthroughs are categorized based upon the development and initial deployment of the technology. In some cases, full deployment may lag significantly due to infrastructure requirements.

Source: SRI Consulting Business Intelligence and Toffler Associates.

Technology Breakthroughs[a] by 2025

Probable | Possible | Plausible

	Probable	Possible	Plausible
What Is the Technology?	**Human strength augmentation technologies** involve mechanical and electronic systems that supplement human physical capabilities. They include wearable exoskeletons with mechanical actuators at hips, elbows, and other skeletal joints. At the extreme an exoskeleton could resemble a wearable humanoid robot that uses sensors, interfaces, power systems, and actuators to monitor and respond to arm and leg movements, providing the wearer with increased strength and control.	**Biofuels technology** is used to produce ethanol from crops such as corn and sugarcane and biodiesel from crops such as grapeseed and soy. Next-generation processes will convert lignocellulosic materials to fuels. Significant potential also exists to cultivate high-growth microalgae for conversion to biodiesel and other biofuels.	**Service robotics** comprise robots and unmanned vehicles for non-manufacturing applications, using a large number of enabling technologies including hardware (e.g. sensors, actuators, power systems) and software platforms (advanced systems might incorporate behavioral algorithms and artificial intelligence). These technologies would enable a wide variety of remote controlled, semiautonomous (with human intervention), and completely autonomous robotic systems.	**Human cognitive augmentation technologies** include drugs, implants, virtual learning environments, and wearable devices to enhance human cognitive abilities. Training software exploits neuroplasticity to improve a person's natural abilities, and wearable and implantable devices promise to improve vision, hearing, and even memory. Bio and information technologies promise enhanced human mental performance at every life stage.
What Are Drivers and Barriers?	**Key Drivers:** Demand for enhanced strength, endurance, and physical security for assisting the handicapped and elderly, and for reducing reliance on manual labor drive these technologies. **Key Barriers:** The cost of manufacturing and the uncertain economic payoff, challenges with portable power sources, and humans' ability to accept and use the technology all constrain development and deployment of the technologies.	**Key Drivers:** High crude oil prices, the desire to reduce dependency on foreign oil sources, and government policies to increase renewable energy sources drive these technologies. **Key Barriers:** Development and deployment of the technologies are restricted by land use, water availability, competition from food applications, and the challenge of scaling up for large-scale production. Biofuels under development today are more sustainable, but production costs are still too high.	**Key Drivers:** Security and safety applications, healthcare or home care for aging populations, and the desire to improve manufacturing productivity and reduce demand for service labor drive these technologies. **Key Barriers:** Development of viable business models, cost, uncertain technology reach (portable power sources and especially artificial intelligence), and integration issues (e.g. IT, robot standards), inhibit the deployment of service robots.	**Key Drivers:** Desires for improved military planning, combatant performance, treatment of Alzheimer's disease, increasing education effectiveness, enhanced personal entertainment, and improving job performance could spur the development of these technologies. **Key Barriers:** Cultural hesitancy to go down an "unnatural" path of human development, and fears of unknown effects could slow down development and deployment. Major scientific and medical research challenges would need to be overcome.
Why Is the Technology a Game-Changer?	Biomechanical devices promise to give a person superhuman strength and endurance or restore a disabled person's capabilities. The widespread use of the technology would greatly improve labor productivity by reducing the number of humans needed for a task or increasing the amount of work a single human can accomplish, while enabling unassisted activity by the disabled or elderly. Such technologies also could greatly improve the combat effectiveness of ground combat forces.	A large-scale move to energy-efficient biofuels could reduce demand for oil and ease international competition for world oil supplies and reserves. In addition, widespread use of biofuels would fundamentally alter the energy dependence of some nations upon imported fossil fuels thereby shifting national interests. Emerging biofuels technologies that avoid significant land-use changes—using feedstocks such as agricultural waste products, native grasses, and biofuels from algae, could significantly reduce net CO2 emissions to the atmosphere.	In domestic settings, widespread use of the technology could leverage manpower, disrupt unskilled labor markets and immigration patterns, and change care for a growing elderly population. As early adopters, governments could provide increased security and project combat power with reduced levels of manpower and system life-cycle costs.	The uneven deployment of these technologies could quickly reshape economic and military advantages between nations. Early and robust adopters could see significant benefits, while nations and societies hesitant to employ the technologies may find themselves disadvantaged. International pressure to regulate the technologies could likewise be disruptive as some cultures may welcome the changes to obtain quick benefits, while others loathe their "un-human" character.

[a]These breakthroughs are categorized based upon the development and initial deployment of the technology. In some cases, full deployment may lag significantly due to infrastructure requirements.

Source: SRI Consulting Business Intelligence and Toffler Associates.

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drop in oil prices to the $55-60 range or below would put significant pressure on the regime to make painful choices between subsidizing populist economic programs and sustaining funding for intelligence and security operations and other programs designed to extend its regional power. The notion that state-dominated economies, apparently able to achieve economic growth absent political freedoms or a fully free market, are a credible alternative to Western notions of free markets and liberal democracy could be badly dented, particularly since history suggests the US and other Western states adapt more quickly and effectively to unexpected changes in energy markets.

Under any scenario energy dynamics could produce a number of new alignments or groupings with geopolitical significance:

- Russia, needing Caspian area natural gas in order to satisfy European and other contracts, is likely to be forceful in keeping Central Asian countries within Moscow's sphere, and, absent a non-Russia-controlled outlet, has a good chance of succeeding.

- China will continue to seek to buttress its market power by cultivating political relationships designed to safeguard its access to oil and gas. Beijing's ties with Saudi Arabia will strengthen, as the Kingdom is the only supplier capable of responding in a big way to China's petroleum thirst.

- Beijing will want to offset its growing reliance on Riyadh by strengthening ties to other producers. Iran will see this as an opportunity to solidify China's support for Tehran, which probably would strain Beijing's ties to Riyadh. Tehran may also be able to forge even closer ties with Russia.

- We believe India will scramble to ensure access to energy by making overtures to Burma, Iran, and Central Asia. Pipelines to India transiting restive regions may connect New Delhi to local instabilities.

Water, Food, and Climate Change

Experts currently consider 21 countries with a combined population of about 600 million to be either cropland or freshwater scarce. Owing to continuing population growth, 36 countries, home to about 1.4 billion people, are projected to fall into this category by 2025. Among the new entrants will be Burundi, Colombia, Ethiopia, Eritrea, Malawi, Pakistan, and Syria. Lack of access to stable supplies of **water** is reaching unprecedented proportions in many areas of the world (see map on page 55) and is likely to grow worse owing to rapid urbanization and population growth. Demand for water for agricultural purposes and hydroelectric power generation also will expand. Use of water for irrigation is far greater than for household consumption. In developing countries, agriculture currently consumes over 70 percent of the world's water. The construction of hydroelectric power stations on major rivers may improve flood control, but it might also cause considerable anxiety to downstream users of the river who expect continued access to water.

"Experts currently consider 21 countries, with a combined population of about 600 million, to be either cropland or freshwater scarce. Owing to continuing population growth, 36 countries, home to about 1.4 billion people, are projected to fall into this category by 2025."

The World Bank estimates that demand for food will rise by 50 percent by 2030, as a result of growing world population, rising affluence, and shifts to Western dietary preferences by a larger middle class. The

Two Climate Change Winners

Russia has the potential to gain the most from increasingly temperate weather. Russia has vast untapped reserves of natural gas and oil in Siberia and also offshore in the Arctic, and warmer temperatures should make the reserves considerably more accessible. This would be a huge boon to the Russian economy, as presently 80 percent of the country's exports and 32 percent of government revenues derive from the production of energy and raw materials. In addition, the opening of an Arctic waterway could provide economic and commercial advantages. However, Russia could be hurt by damaged infrastructure as the Arctic tundra melts and will need new technology to develop the region's fossil energy.

Canada will be spared several serious North American climate-related developments—intense hurricanes and withering heat waves—and climate change could open up millions of square miles to development. Access to the resource-rich Hudson Bay would be improved, and being a circumpolar power ringing a major portion of a warming Arctic could be a geopolitical and economic bonus. Additionally, agricultural growing seasons will lengthen, net energy demand for heating/cooling will likely drop, and forests will expand somewhat into the tundra. However, not all soil in Canada can take advantage of the change in growing season, and some forest products are already experiencing damage due to changes in pest infestation enabled by warmer climates.

global food sector has been highly responsive to market forces, but farm production probably will continue to be hampered by misguided agriculture policies that limit investment and distort critical price signals. Keeping food prices down to placate the urban poor and spur savings for industrial investment has distorted agricultural prices in the past. If political elites are more worried about urban instability than rural incomes—a safe bet in many countries—these policies are likely to persist, increasing the risk of tight supplies in the future. The demographic trend for increased urbanization—particularly in developing states—underscores the likelihood that failed policies will continue.

Between now and 2025, the world will have to juggle competing and conflicting energy security and food security concerns, yielding a tangle of difficult-to-manage consequences. In the major grain exporters (the US, Canada, Argentina, and Australia), demand for biofuels—enhanced by government subsidies—will claim larger areas of cropland and greater volumes of irrigation water, even as biofuel production and processing technologies are made more efficient. This "fuel farming" tradeoff, coupled with periodic export controls among Asian producers and rising demand for protein among growing middle classes worldwide, will force grain prices in the global market to fluctuate at levels above today's highs. Some economists argue that, with international markets settling at lower grain volumes, speculation—invited by expectations of rising fuel costs and more erratic, climate change-induced weather patterns—could play a greater role in food prices.

A consortium of large agricultural producers—including India and China, along with the US and EU partners—is likely to work to launch a second Green Revolution, this time in Sub-Saharan Africa, which could help dampen price volatility in worldwide grain markets. By 2025, increases in African grain yields probably will be substantial, but the increases will be confined principally to states in the southern and eastern regions of the continent, which will have deepened trade and security relations with East and South

Strategic Implications of an Opening Arctic

Estimates vary as to when the Arctic is likely to be ice free during the summer. The National Snow and Ice Data Center suggests a seasonally ice-free Arctic by 2060; more current research suggests the date could be as soon as 2013. The two most important implications of an opening Arctic are improved access to likely vast energy and mineral resources and potentially shorter maritime shipping routes.

Transiting the Northern Sea Route above Russia between the North Atlantic and the North Pacific would trim about 5,000 nautical miles and a week's sailing time off a trip compared with use of the Suez Canal. Voyaging between Europe and Asia through Canada's Northwest Passage would trim some 4,000 nautical miles off of a trip using the Panama Canal.

Resource and shipping benefits are unlikely to materialize by 2025. The US National Petroleum Council has said that some of the technology to exploit oil from the heart of the Arctic region may not be ready until as late as 2050. Nonetheless, these potential riches and advantages are already perceptible to the United States, Canada, Russia, Denmark, and Norway—as evidenced by the emergence of competing territorial claims, such as between Russia and Norway, and Canada and Denmark.

Although serious near-term tension could result in small-scale confrontations over contested claims, the Arctic is unlikely to spawn major armed conflict. Circumpolar states have other major ports on other bodies of water, so the Arctic does not pose any lifeblood blockade dangers. Additionally, these states share a common interest in regulating access to the Arctic by hostile powers, states of concern, or dangerous nonstate actors; and by their shared need for assistance from high-tech companies to exploit the Arctic's resources.

The greatest strategic consequence over the next couple of decades may be that relatively large, wealthy, resource-deficient trading states such as China, Japan, and Korea will benefit from increased energy resources provided by any Arctic opening and shorter shipping distances.

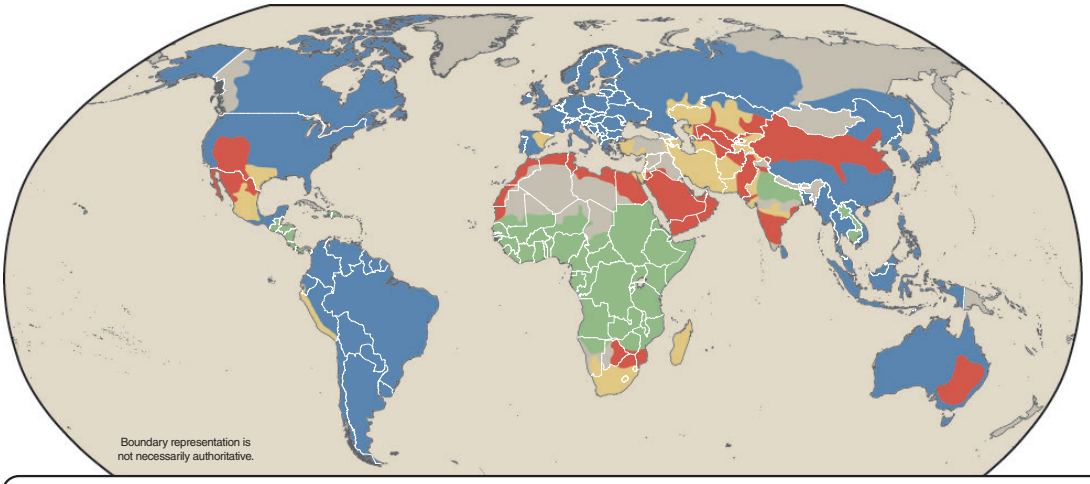
Asian states. Elsewhere south of the Sahara, civil conflict and the political and economic focus on mining and petroleum extraction are likely to foil most of the consortium's attempts to upgrade irrigation and rural transportation networks and to extend credit and investment, allowing population growth to outpace gains in agricultural productivity.

In addition to the currently projected scarcities of freshwater and cropland, the UK Treasury-commissioned Stern Report estimates that by the middle of the century 200 million people may be permanently displaced "climate migrants"—representing a ten-fold increase over today's entire documented refugee and internally displaced populations. Although this is considered high by many experts, broad agreement exists about the risks of large scale migration and the need for better preparation. Most displaced persons traditionally relocate within their home countries, but in the future many are likely to find their home countries have diminishing capabilities to accommodate them. Thus the number of migrants seeking to move from disadvantaged into relatively privileged countries is likely to increase. The largest inflows will mirror many current migratory patterns—from North Africa and Western Asia into Europe, Latin America into the US, and Southeast Asia into Australia.

Over the next 20 years, worries about climate change effects may be more significant than any physical changes linked to climate change. Perceptions of a rapidly changing environment may cause nations to take unilateral actions to secure resources, territory, and other interests. Willingness to engage in greater multilateral cooperation will depend on a number of factors, such as the behavior of other countries, the economic context, or the importance of the interests to be defended or won.

Many scientists worry that recent assessments underestimate the impact of climate change and misjudge the likely time when effects will be felt. Scientists currently have limited capability to predict the likelihood or magnitude of extreme climate shifts but believe—based on historic precedents—that it will not occur gradually or smoothly. Drastic cutbacks in allowable CO_2 emissions probably would disadvantage the rapidly emerging economies that are still low on the efficiency curve, but large-scale users in the developed world—such as the US—also would be shaken and the global economy could be plunged into a recession or worse.

Projected Global Water Scarcity, 2025



Physical water scarcity: More than 75% of river flows are allocated to agriculture, industries, or domestic purposes. This definition of scarcity — relating water availability to water demand — implies that dry areas are not necessarily water-scarce.

Approaching physical water scarcity: More than 60% of river flows are allocated. These basins will experience physical water scarcity in the near future.

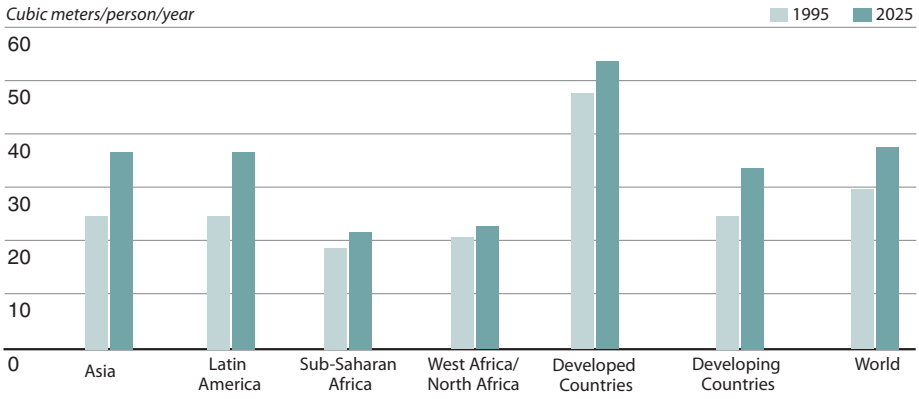
Economic water scarcity: Water resources are abundant relative to water use, with less than 25% of water from rivers withdrawn for human purposes, but malnutrition exists.

Little or no water scarcity: Abundant water resources relative to use. Less than 25% of water from rivers is withdrawn for human purposes.

Not estimated

Source: International Water Management Institute.

Per Capita Water Consumption, 1995 and 2025



Source: International Food Policy Research Institute , Global Water Outlook to 2025.

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Sub-Saharan Africa: More Interactions with the World and More Troubled

In 2025, Sub-Saharan Africa will remain the most vulnerable region on Earth in terms of economic challenges, population stresses, civil conflict, and political instability. The weakness of states and troubled relations between states and societies probably will slow major improvements in the region's prospects over the next 20 years unless there is sustained international engagement and, at times, intervention. Southern Africa will continue to be the most stable and promising sub-region politically and economically.

Sub-Saharan Africa will continue to be a major supplier of oil, gas, and metals to world markets and increasingly will attract the attention of Asian states seeking access to commodities, including China and India. However, despite increased global demand for commodities, increased resource income may not benefit the majority of the population or result in significant economic gains. Poor economic policies—rooted in patrimonial interests and incomplete economic reform—will likely exacerbate ethnic and religious divides as well as crime and corruption in many countries. Ruling elites are likely to continue to accrue greater income and wealth, while poverty will persist or worsen in rural areas and sprawling urban centers. The divide between elite and non-elite populations is likely to widen, reinforcing conditions that could generate divisive political and religious extremism.

By 2025, the region's population is expected to reach over one billion, notwithstanding the effects of HIV/AIDS. Over one-half of the population will be under age 24, and many will be seeking economic opportunity or physical safety via out-migration owing to conflict, climate change, or widespread unemployment. The earliest global effects of climate change, including water stress and scarcity, will begin to occur in Sub-Saharan Africa by 2025.

Today almost one-half (23 of 48) of the countries in Sub-Saharan Africa are classed as democracies, and the majority of African states are on a democratic path, but the most populous states in the region and those with high population growth could backslide.

Although Africa is already assuming more of its own peacekeeping responsibilities, the region will be vulnerable to civil conflict and complex forms of interstate conflict—with militaries fragmented along ethnic or other divides, limited control of border areas, and insurgents and criminal groups preying on unarmed civilians in neighboring countries. Central Africa contains the most troubling of these cases, including Congo-Kinshasa, Congo-Brazzaville, Central African Republic, and Chad.

In contrast to other regions of the world, African attitudes toward the US will remain positive, although many African governments will remain critical of US policies on issues like the Middle East, Cuba, and global trade. Africa will continue to push for UN reform and for permanent representation on the UN Security Council.

Global Scenario II: *October Surprise*

In the following fictionalized account, global inattention to climate change leads to major unexpected impacts, thrusting the world into a new level of vulnerability. Scientists are currently uncertain whether we already have hit a tipping point at which climate change has accelerated and whether there is little we can do—including reducing emissions—that will mitigate effects even over the longer term. Most scientists believe we will not know whether we have hit a tipping point until it is too late. Uncertainties about the pace and specific vulnerabilities or impacts from climate change are likely to persist over the next 15-20 years even if our knowledge about climate change deepens, according to many scientists.

An extreme weather event—as described in this scenario—could occur. Coping with the greater frequency of such events, coupled with other physical impacts of climate change such as growing water scarcities and more food crises, may preoccupy policymakers even while options for solving such problems dwindle. In this example, relocating the New York Stock Exchange to a less vulnerable location is considered, but serious consideration also would be given to relocating other institutions to ensure continuity of operations. Although this scenario focuses on an event that occurs in the US, other governments have been caught by surprise with different types of environmental disasters and have suffered a loss of standing. Mitigation efforts—further cutbacks in carbon emissions—are unlikely to make any difference, at least in the short run, according to this account. Such a world involving potentially major dislocations could threaten both developed and developing countries.

Preconditions assumed in this scenario include:

- Nations adopt a "growth-first" mentality leading to widespread environmental neglect and degradation.
- Governments, particularly those lacking transparency, lose legitimacy as they fail to cope with environmental and other disasters.
- Despite significant technological progress, no technological "silver bullet" is found to halt the effects of climate change.
- National solutions to environmental problems are short term and inadequate.

Presidential Diary Entry
October 1, 2020

The term "October Surprise" keeps recurring in my mind…I guess we had it coming, but it was a rude shock. Some of the scenes were like the stuff from the World War II newsreels, only this time it was not Europe but Manhattan. Those images of the US aircraft carriers and transport ships evacuating thousands in the wake of the flooding still stick in my mind. Why does hurricane season have to coincide with the UNGA in New York? It's bad enough that this had to happen; it was doubly embarrassing that half the world's leaders were here to witness it—and a fair number of them had to be specially airlifted or spirited away for their safety.

I guess the problem was that we counted on this not happening, at least not yet. Most scientists assumed the worst effects of climate change would occur later in the century. Still, enough warned there was always a chance of an extreme weather event coming sooner and, if it hit just right, one of our big urban centers could be knocked out. As I remember, most of my advisors thought the chances were pretty low after the last briefing we got on climate change. But we were warned that we needed to decentralize our energy generation and improve the robustness of our infrastructure to withstand extreme weather events. Tragically, we did not heed this advice.

We'll survive, but Wall Street really has taken a blow and I don't think we will get the NY Stock Exchange back up and running as quickly as we did after 9/11. There is a question whether it will continue to be the NY Stock Exchange to begin with; it might have to change its name to the "Garden State (New Jersey) Stock Exchange"—wouldn't that be a blow to New Yorkers' pride!

It's not as if this is just happening to us. Truth be told, the problem has been our whole attitude about globalization. When I say "our," I really mean in this context the elite or even the little knot of leaders around the world. We all have been focused on boosting or maintaining greater economic growth. We have a lot to be proud of too in that regard. We have avoided giving in to protectionist urges and managed to reenergize the trade rounds. But we have not prepared sufficiently for the toll that irresponsible growth is having on the environment. The New York disaster may not have been preventable with any measures we could have taken 20 years ago, but what are we laying in store for future generations by ignoring the signs? We all assume technology will come to the rescue, but so far we have not found the silver bullet and carbon emissions continue to climb.

What we did not understand is that the general publics in several countries appear to be ahead of leaders in understanding the urgency or at least they have had a better sense of the need for trade-offs. They have become early adopters for energy generation from renewables, the use of clean water technologies, and using improved Internet connectivity to avoid the concentration of people that make them vulnerable to extreme weather events. The Europeans, of course, have been out in the lead on energy efficiency, but they have been too ready to sacrifice growth, and without economic growth, they have not been able to generate high-paying jobs.

In China, it's the opposite—too much crony capitalism. It's not clear, for example, that China's Communist Party (CCP) will survive the scandal over burst dams and the devastation that followed. A couple of decades ago, I would have thought it possible. At that time, the public there was so grateful for the material benefits accruing from China's hell-bent efforts to modernize that the Chinese people forgave the leaders almost everything. Now it is different. The middle class wants clean air and water. They don't like the environmental devastation that was the price of rapid modernization or corruption that winks at the turning off of US provided carbon capture equipment in their coal fired electrical plants. The Party is split too. Half worry about a slowdown from more sustainable, environmentally prudent growth that could be politically devastating if jobs are not generated to the same degree. The other half understands the hardships and is more attuned to changing middle class priorities. I would not be surprised if the 100,000 who perished in the recent dam disaster turn out to be the straw that breaks the CCP's legitimacy, coming as it does on the heels of those corruption allegations against high party officials.

The poorest countries have suffered the most from our hands-off approach to globalization. I know we have talked for some time about not all boats being lifted and the need to do something about it. But I think we thought it best that Bill Gates, NGOs, and others handle the problem. Of course, everyone has to get involved. NGOs can't mount peacekeeping operations. States at some point have to take responsibility. Most of these countries did not have a chance without strong outside intervention. The fact that we had clean water technology and could not find a way to get it delivered to the most needy only made the bad impacts of climate change worse.

With the climate changing rapidly, we are facing more problems—though not insuperable—in maintaining adequate agricultural production. More challenging than boosting agricultural yields overall is that changing weather patterns mean certain areas can't sustain themselves. People migrate to the cities but the infrastructure is insufficient to support such burgeoning populations. This in turn sows the seeds for social conflict which impedes any steps toward good governance and actually digging out from a long downward cycle. I count about 20 countries in this condition.

The problem is that some of these are not small, geopolitically insignificant countries. Some—like Nigeria—we in the developed world rely on for needed resources. Because of the encroaching desertification in the north, the religious clash between Muslims and Christians is heating up. Another Biafra-like civil war—only this time along North-South lines—is not inconceivable.

We talk a lot about these problems at the G-14 summits and in fact have started to engage in joint scenario exercises, but doing anything about an impending storm cloud is still beyond us. My last thought for the diary before I have to greet the dignitaries being airlifted onto the aircraft carrier for the UNGA reception: the growth projection figures are really bad. The cumulation of disasters, needed cleanups, permafrost melting, lower agricultural yields, growing health problems, and the like are taking a terrible toll, much greater than we anticipated 20 years ago.

Chapter 5

Growing Potential for Conflict

We now assess the potential for conflict—both interstate and intrastate—over the next 15-20 years to be greater than we anticipated in ***Mapping the Global Future***, particularly in the greater Middle East. Large parts of the region will become less volatile than today and more like other parts of world, such as East Asia, where economic goals predominate, but other portions of the region remain ripe for conflict. The combination of increasingly open economies and persistently authoritarian politics creates the potential for insurgencies, civil war, and interstate conflict. By 2025, Iran's nuclear ambitions are likely to be clear in one way or the other and the region will either be swept up in an arms race or have found another way to try to establish regional security. Although we believe the appeal of al-Qa'ida and other international terrorist groups will diminish over the next 15-20 years, pockets of support will remain, ensuring a continuing threat, particularly as lethal technology is expected to become more accessible.

A Shrinking Arc of Instability by 2025?
In our previous study, ***Mapping the Global Future***, we assessed that those states most susceptible to conflict are in a great arc of instability stretching from Sub-Saharan Africa through North Africa, into the Middle East, the Balkans, the Caucasus, and South and Central Asia, and parts of Southeast Asia. Today, parts of this arc are experiencing increasing economic activity, including moderate to high levels of GDP growth, slow but perceptible economic reform, improved regulatory performance, deepening financial markets, high levels of outside and intra-regional investment and related technology transfers, and development of new trade corridors. In the medium-to-longterm, increased rates of growth are likely to be sustained if energy prices remain high, but not so high that they depress growth in other regions. Awareness of increasing vulnerability to systemic changes in world energy markets also may act as a goad to further economic reform, including greater diversification in energy-rich states.

For regimes, managing economic change will involve a delicate balancing act between the imperatives of fostering economic growth and maintaining authoritarian rule. Although some regimes may succeed, the odds are that only one or two will become genuine democracies and one or two will end up with civil disorder and conflict because rulers miscalculate the tradeoffs or take gambles that don't pay off.

Growing Risk of a Nuclear Arms Race in the Middle East
A number of states in the region are already thinking about developing or acquiring nuclear technology useful for development of nuclear weaponry. Over the next 15-20 years, reactions to the decisions Iran makes about its nuclear program could cause a number of regional states to intensify these efforts and consider actively pursuing nuclear weapons. This will add a new and more dangerous dimension to what is likely to be increasing competition for influence within the region, including via proxies—Shia in Iran's case and Sunnis for most of its neighbors—and a competition among outside powers anxious to preserve their access to energy supplies and to sell sophisticated conventional weaponry in exchange for greater political influence and energy agreements.

Not Inevitable… Historically, many states have had nuclear weapons ambitions but have not gone the distance. States may prefer to retain the technological ability to produce nuclear weapons rather than to develop actual weapons. Technological impediments and a desire to avoid political isolation and seek greater integration into the global economy

A Non-nuclear Korea?

We see a unified Korea as likely by 2025—if not as a unitary state, then in some form of North-South confederation. While diplomacy working to end North Korea's nuclear weapons program continues, the final disposition of the North's nuclear infrastructure and capabilities at the time of reunification remain uncertain. A new, reunified Korea struggling with the large financial burden of reconstruction will, however, be more likely to find international acceptance and economic assistance by ensuring the denuclearization of the Peninsula, perhaps in a manner similar to what occurred in Ukraine post-1991. A loosely confederated Korea might complicate denuclearization efforts. Other strategic consequences are likely to flow from Korean unification, including prospects for new levels of major power cooperation to manage new and enduring challenges, such as denuclearization, demilitarization, refugee flows, and financing reconstruction.

could motivate Tehran to forego nuclear weaponization. However, even an Iranian *capacity* to develop nuclear weapons might prompt regional responses that could be destabilizing.

If Iran does develop nuclear weapons, or is seen in the region as having acquired a latent nuclear weapons capability, other countries in the region may decide *not* to seek a corresponding capability. It is more likely, however, that a few of Iran's neighbors will see Iran's development of nuclear weapons or a latent weapons capability as an existential threat or as resulting in an unacceptable, fundamental shift of power in the region, and therefore will seek offsetting capabilities. Security guarantees from existing nuclear powers that regional states find credible may be regarded by them as a sufficient offset to an Iranian nuclear weapons capability, but it could be a tall order to expect such guarantees to satisfy all of those concerned about a nuclear Iran.

…But Potentially More Dangerous than the Cold War. The prospect that nuclear weapons will embolden Iran, lead to greater instability, and trigger shifts in the balance of power in the Middle East appears to be the key concern of the Arab states in the region and may drive some to consider acquiring their own nuclear deterrent. Iran's growing nuclear capabilities are already partly responsible for the surge of interest in nuclear energy in the Middle East, fueling concern about the potential for a nuclear arms race. Turkey, United Arab Emirates, Bahrain, Saudi Arabia, Egypt, and Libya are or have expressed interest in building new nuclear power facilities. Future Iranian demonstrations of its nuclear capabilities that reinforce perceptions of its intent and ability to develop nuclear weapons potentially would prompt additional states in the region to pursue their own nuclear weapons programs.

"We see a unified Korea as likely by 2025—if not as a unitary state, than in some form of North-South confederation."

It is not certain that the type of stable deterrent relationship that existed for most of the Cold War would emerge naturally in the Middle East with multiple nuclear-weapons capable states. Rather than episodes of suppressing or shortening low-intensity conflicts and terrorism, the possession of nuclear weapons may be perceived as making it "safe" to engage in such activities, or even larger conventional attacks, provided that certain redlines are not crossed. Each such incident between nuclear-armed states, however, would hold the potential for nuclear escalation.

The continued spread of nuclear capabilities in the greater Middle East, where several states will be facing succession challenges over the next 20 years, also will raise new concerns over the capacity of weak states to maintain control over their nuclear technologies and arsenals. If the number of nuclear-capable states increases, so will the number of countries potentially willing to provide nuclear assistance to other countries or to terrorists. The potential for theft or diversion of nuclear weapons, materials, and technology—and the potential for unauthorized nuclear use—also would rise. Finally, enough countries might decide to seek nuclear weapons capabilities in reaction to an Iranian capability that countries beyond the region would begin pursuing their own nuclear weapons programs.

New Conflicts Over Resources?

The rising energy demands of growing populations and economies may bring into question the availability, reliability, and affordability of energy supplies. Such a situation would heighten tensions between states competing for limited resources, especially if accompanied by increased political turbulence in the Middle East and a general loss of confidence in the ability of the marketplace to satisfy rising demands. National companies could control the lion's share of the world's hydrocarbon resources, leading to a further blending of energy-state relationships and geopolitical concerns.

Perceptions of energy scarcity will drive countries to take actions to assure their future access to energy supplies. In the worst case this could lead to interstate conflicts if government leaders deem assured access to energy resources to be essential to maintaining domestic stability and the survival of their regime. However, even actions short of war will have important geopolitical implications as states undertake strategies to hedge against the possibility that existing energy supplies will not meet rising demands. Energy security considerations are already driving countries such as China and India to purchase equity stakes in energy fields, and evolving competitions are increasingly being supported by military capabilities leading to the potential for heightened tensions and even conflict. Energy-deficient states may employ transfers of arms and sensitive technologies and the promise of a political and military alliance as inducements to establish strategic relationships with energy-producing states.

- Central Asia has become an area of intense international competition for access to energy. Although Russia and China currently are working cooperatively to reduce the leverage of outside powers, especially the United States, competition between the two in Central Asia could escalate if in the future Russia seeks to interfere with China's relations in the region or China becomes more aggressive in obtaining its access to energy supplies in parts of the former Soviet Union.

- The future development of novel drilling techniques may create new opportunities to find and exploit previously unexplored ultra-deep oil fields. Such fields, however, may be located in areas of contested ownership, such as Asia or the Arctic, creating the potential for conflict.

Middle East/North Africa: Economics Drives Change, but with Major Risk of Turmoil

The Middle East and North Africa (MENA) will remain a geopolitically significant region in 2025, based on the importance of oil to the world economy and the threat of instability. The region's future will depend on how leaders manage oil windfalls, demographic changes, pressure for political change, and regional conflicts.

In a positive scenario in which economic growth becomes increasingly rooted and sustained, regional leaders will choose to invest in the region; implement economic, educational, and social policies that encourage more growth; move forward with political reform that empowers moderate—and probably Islamic—political parties; work to settle regional conflicts; and implement security agreements that help prevent future instability.

- In a more negative scenario, leaders will fail to prepare their growing populations to participate productively in the global economy, authoritarian regimes will hold tightly to power and become more repressive, and regional conflicts will remain unresolved as population growth strains resources.

Demographically, a number of Middle Eastern and North African countries are positioned where Taiwan and South Korea were before their takeoff in the 1960s and 1970s. Over the next 15 or so years, the proportion of the economically active populations (ages 15-64) in countries like Egypt will exceed that of the economically dependent population by a much greater amount than in any other region. This differential provides an opportunity to accelerate economic growth if governments put appropriate economic and social policies in place. Prospects are best in the North African and Gulf states.

- Foreign investment—much of it originating from within the region—will increase integration between Arab economies and drive private-sector development. The most promising industries for job growth are likely to be in services, putting the region on a different developmental path than East Asia.

- To maximize growth potential, MENA governments will need to improve their educational systems to produce a more technically skilled work force and encourage citizens accustomed to public sector jobs to accept the demands and volatility of the private sector. (East Asian economies prospered because of sustained government efforts to improve rapidly the quality of the work force through universal education and by developing export industries.)

In other regions, integrating young adults into the work force—coupled with a declining birth rate and shrinking youth bulge—has provided an opening for democratization. Social scientists have found that, as an increasing proportion of the population had a stake in the system, formerly authoritarian states like South Korea and Taiwan felt they could experiment with political liberalization. An important cluster of North African countries—Algeria, Libya, Morocco, Egypt, and Tunisia—has the potential to realize such a demographic-democratic nexus in the period to 2025, but it is unclear whether these authoritarian regimes will exploit these opportunities to liberalize. *(Continued on next page…)*

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A Two-Tier Muslim World? Although the Western paradigm separating religious and secular authority may still be less compelling to Muslim publics, a greater emphasis on economics and, most importantly, greater participation of women in the work force may spur new forms of progressive Islam. This does not mean that extremist strands will disappear; in the short term they might benefit from unease over the changing role of women and alternative family models. But over time, lower fertility promotes religious and political stability and, if secularization in southern Europe is a guide, modernized versions of Islam could take root by 2025.

The channeling of political dissent into Islamic discourse—a variant of the global revival of religious identity in the aftermath of the Cold War—and states' efforts to manipulate Islamic currents will reinforce the dominance of Islam in Middle Eastern politics and society in 2025. As a result, pressures for greater political pluralism are likely to produce a bigger role for Islamic political parties and a re-thinking of how Islam and politics should interact and influence each other, with considerable political and social turmoil generated in the process.

Even as some states may liberalize, others may fail: youth bulges, deeply rooted conflicts, and limited economic prospects are likely to keep Palestine, Yemen, Afghanistan, Pakistan, and others in the high-risk category. Spillover from turmoil in these states and potentially others increases the chance that moves elsewhere in the region toward greater prosperity and political stability will be rocky. The success of efforts to manage and resolve regional conflicts and to develop security architectures that help stabilize the region will be a major determinant of the ability of states to grow their economies and pursue political reform.

Resolution of the Syrian and Palestinian conflicts with Israel, in particular, would broaden the ideological and political discourse within secular and Islamic circles, undermine a traditional pretext for maintaining large militaries and curtailing freedoms, and help defuse sectarian and ethnic tensions in the region.

Iran's trajectory is also likely to have lasting regional impacts—for good or ill. Iran's fractious regime, nationalist identity, and ambivalence toward the United States will make any transition from regional dissenter toward stakeholder perilous and uneven. Although Iran's aims for regional leadership—including its nuclear ambitions—are unlikely to abate, its regional orientation will have difficulty discounting external and internal pressures for reform. An Iranian perception of greater shared interests with the West in Iraq and Afghanistan, for example, and sustained progress on Arab-Israeli peace that weakens Iranian-Syrian ties and accommodates or sidelines Iran's sub-state allies would provide security incentives and pressures on Iran to adjust its regional role. A political consensus within Iran to develop further its significant economic potential—fueled potentially by a sustained popular backlash against corruption and economic mismanagement and a fall in energy rents—could provide an additional push to shift Iran's factional politics to the left and an incentive for Iran to adjust its policies with a view toward easing US and international sanctions.

Energy Security

Other possible examples of the militarization of energy security include:

States using their control of energy resources as weapons of political coercion and influence. Russia is seeking to position itself to control energy supply and related transportation networks from Europe to East Asia. This would enable Moscow to use its control over energy flows to promote Russian interests and influence.

Threats posed by terrorism and piracy to energy production and transit. Public statements by al-Qa'ida leaders indicate terrorists are interested in striking Persian Gulf oil facilities. The protection of energy pipelines, facilities, and shipping from terrorist attacks will be a key security concern and mission for military forces.

Domestic instability, insurgencies, and conflict within strategic energy-producing and exporting states. Ethnic and political violence and criminal activity currently threaten a large portion of Nigeria's oil production. State failure in a key energy producing country may require military intervention by outside powers to stabilize energy flows.

Concerns about assuring future access to energy supplies also are fostering increased naval competition. Despite the growing number of pipeline projects, in 2025 Asian countries will remain dependent on sea transfers of energy from suppliers in the Middle East. This is raising concerns about the future of maritime security in a zone extending from the Persian Gulf to East and Southeast Asia. Maritime security concerns are providing the rationale for a series of naval buildups and modernization efforts in the region, such as China's and India's development of "blue-water" naval capabilities, to protect critical economic assets and secure access to energy resources. Other national navies in the Middle East and Asia will not be able to replace the US Navy's role in protecting strategic sea lines of communication in 2025, but the buildup of regional naval capabilities could lead to increased tensions, rivalries, and counterbalancing.

- Growing concerns over maritime security may create opportunities for multinational cooperation in protecting critical sea lanes. Mutual suspicions regarding the intentions behind naval build-ups by potential regional rivals or the establishment of alliances that exclude key players would, however, undermine efforts for international cooperation.

- A naval arms race in Asia may emerge in response to China's further development of naval power projection. A naval arms race might also be spurred by "anti-access" capabilities—such as attack submarines and long-range antiship missiles—that become widely viewed as efforts by Beijing to extend its political influence in the region and to deter attempts to cut off China's seaborne energy supplies by threatening mutual disruption of sea trade.

Climate change is unlikely to trigger interstate war, but it could lead to increasingly heated interstate recriminations and possibly to low-level armed conflicts. With water becoming more scarce in several regions, cooperation over changing water resources is likely to be increasingly difficult within and between states, straining regional relations. Such regions include the Himalayan region, which feeds the major rivers of China, Pakistan, India, and Bangladesh; Israel-

Another Use of Nuclear Weapons?

The risk of nuclear weapon use over the next 20 years, although remaining very low, is likely to be greater than it is today as a result of several converging trends. The spread of nuclear technologies and expertise is generating concerns about the potential emergence of new nuclear weapon states and the acquisition of nuclear materials by terrorist groups. Ongoing low-intensity clashes between India and Pakistan continue to raise the specter that such events could escalate to a broader conflict between those nuclear powers. The possibility of a future disruptive regime change or collapse occurring in a nuclear weapon state such as North Korea also continues to raise questions regarding the ability of weak states to control and secure their nuclear arsenals.

In addition to these longstanding concerns, new political-military developments could further erode the nuclear "taboo." The prospect of a nuclear-armed Iran spawning a nuclear arms race in the greater Middle East will bring new security challenges to an already conflict-prone region, particularly in conjunction with the proliferation of long-range missile systems. Furthermore, future acquisition of nuclear weapons by states with weak command and control procedures and safeguards increases the probability of accidental or unauthorized nuclear use.

Future asymmetries in conventional military capabilities among potential rivals might tempt weak states to view nuclear weapons as a necessary and justifiable defense in response to the threat of overwhelming conventional attacks. In such cases, the defending power might try to limit the potential for escalation by employing a nuclear weapon test to signal resolve and deter aggression or by confining the use of nuclear weapons to the defense of its own territory. Options for limited physical destruction attacks such as those that use very low-yield weapons or high-altitude nuclear blasts designed to disrupt an enemy's information networks and systems via an electromagnetic pulse effect could further erode the taboo against nuclear weapon use and prompt reassessments of the vulnerabilities of modern conventional military forces.

If nuclear weapons are used destructively in the next 15-20 years, the international system will be shocked as it experiences immediate humanitarian, economic, and political-military repercussions. How the world would respond over the long-term to another use of nuclear weapons would, however, likely depend on the context in which such weapons were used. Prevailing perceptions regarding whether the use of a nuclear weapon was justified, the level of destructiveness it created, and the future utility of nuclear weapons would drive global reactions regarding counterproliferation and nuclear disarmament.

- A terrorist use of a nuclear weapon or an escalating conflict between two nuclear powers, such as India and Pakistan, would graphically demonstrate the danger of nuclear weapons, prompting calls for global nuclear disarmament and energizing counterproliferation and counterterrorism measures.

A successful nuclear weapon test or use of a nuclear weapon by a state to deter or halt a conventional attack might, on the other hand, enhance the perception of the utility of nuclear weapons in defending territorial sovereignty and increase pressures for proliferation in countries that do not possess a strong conventional military or security guarantees.

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In either case, a future use of nuclear weapons probably would bring about significant geopolitical changes as some states would seek to establish or reinforce security alliances with existing nuclear powers and others would push for global nuclear disarmament. In Europe, for example, divisions could emerge between some countries in Western Europe that support nuclear disarmament and those of Eastern Europe that still might fear Russia's nuclear arsenal.

Palestinian Territories; along the Jordan River (Israel-Jordan) and the Fergana Valley of Central Asia. Such dire scenarios are not inevitable even with worse-than-anticipated climate change impacts, however. Economic development, the spread of new technologies, and robust new mechanisms for multilateral cooperation to deal with climate change may foster greater global collaboration.

Terrorism: Good and Bad News

Terrorism is unlikely to disappear by 2025, but its appeal could diminish if economic growth continues and youth unemployment is mitigated in the Middle East. Economic opportunities for youth and greater political pluralism probably would dissuade some from joining terrorists' ranks, but others—motivated by a variety of factors, such as a desire for revenge or to become "martyrs"—will continue to turn to violence to pursue their objectives.

"For those terrorist groups active in 2025, the diffusion of technologies and scientific knowledge will place some of the world's most dangerous capabilities within their reach."

- In the absence of employment opportunities and legal means for political expression, conditions will be ripe for disaffection, growing radicalism, and possible recruitment of youths into terrorist groups.
- Terrorist and insurgent groups in 2025 will likely be a combination of descendants of long-established groups—that inherit organizational structures, command and control processes, and training procedures necessary to conduct sophisticated attacks—and newly emergent collections of the angry and disenfranchised that become self-radicalized.

As long as turmoil and societal disruptions, generated by resource scarcities, poor governance, ethnic rivalries, or environmental degradation, increase in the Middle East, conditions will remain conducive to the spread of radicalism and insurgencies. Future radicalism could be fueled by global communications and mass media. Increasing interconnectedness will enable individuals to coalesce around common causes across national boundaries, creating new cohorts of the angry, downtrodden, and disenfranchised. In some situations these new networks could act as forces for good by pressuring governments through non-violent means to address injustice, poverty, the impacts of climate change, and other social issues. Other groups, however, could use networks and global communications to recruit and train new members, proliferate radical ideologies, manage their finances, manipulate public opinion, and coordinate attacks.

Why al-Qa'ida's "Terrorist Wave" Might Be Breaking Up

As al-Qa'ida celebrates its 20th birthday, most experts assert that the struggle against it will continue indefinitely, the so called "long war." Other experts who have studied past "waves" of terrorism believe that al-Qa'ida is an "aging" group by terrorist standards and suffers from strategic weaknesses that could cause it to decay into marginality, perhaps shortening the lifespan of the Islamic terrorist wave.

A wave of terror is a cycle of activity—which can last up to 40 years—characterized by expansion and contraction phases: rise, floodtide of violence, and ebb. The wave of terror concept was developed by UCLA Professor David C. Rapoport and provides a basis for the comparative analysis of terrorist movements. In each wave, similar terrorist activities occur in many countries, driven by a common vision—such as anarchism, Marxism, nationalism, or Islamic extremism. ***Terrorist groups who form the crest of each wave usually dissolve before the entire wave does, and their decay contributes to the breaking of the wave.*** Al-Qa'ida's weaknesses—unachievable strategic objectives, inability to attract broad-based support, and self-destructive actions—might cause it to decay sooner than many people think.

Research indicates that terrorists' strategic objectives fail on two fronts. Objectives that pose a threat to the existing political order court tough counterterrorism measures, while objectives that are seen as neither achievable nor relevant to solving problems have little appeal to elites or the general populace. The two primary strategic aims of al-Qa'ida—the establishment of a global Islamic caliphate and the removal of US and Western influence so that "apostate" regimes can be toppled—are clearly threats to many existing Muslim governments and are resulting in stronger counterterrorism measures.

- There is little indication that the vast majority of Muslims believe that such objectives are realistic or that, if they could come to pass, would solve the practical problems of unemployment, poverty, poor educational systems, and dysfunctional governance.

Despite sympathy for some of its ideas and the rise of affiliated groups in places like the Mahgreb, al-Qa'ida has not achieved broad support in the Islamic World. Its harsh pan-Islamist ideology and policies appeal only to a tiny minority of Muslims.

- According to one study of public attitudes toward extremist violence, there is little support for al-Qa'ida in any of the countries surveyed—Algeria, Egypt, Jordan, Kuwait, Lebanon, Morocco, Qatar, Saudi Arabia, United Arab Emirates, and Yemen. The report also found that majorities in all Arab countries oppose jihadi violence, by any group, on their own soil.

- Al-Qa'ida is alienating former Muslim supporters by killing Muslims in its attacks. Recent scholarly research indicates that terrorist groups that kill civilians seldom accomplish their strategic goals. Although determining precisely the number of Muslims worldwide who have died in al-Qa'ida attacks is difficult, examination of available evidence suggests that at least 40 percent of the victims have been Muslims.

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The roughly 40-year cycle of terrorist waves suggests that the dreams that inspire terrorist group members' fathers to join particular groups are not attractive to succeeding generations. The prospect that al-Qa'ida will be among the small number of groups able to transcend the generational timeline is not high, given its harsh ideology, unachievable strategic objectives, and inability to become a mass movement.

In relying almost exclusively on terrorism as a means to achieve its strategic objectives, rather than transforming into a political movement like Hizbollah or Hamas, al-Qa'ida is using a stratagem that rarely is successful. Recent academic research indicates that only 6 percent of terrorist groups active in the last 40 years have achieved their proclaimed strategic objectives. Al-Qa'ida's lack of success in executing attacks against the "far enemy" could portend a period of operational futility leading to increased frustration, decreased organizational élan, and inability to attract new members.

Because history suggests that the global Islamic terrorist movement will outlast al-Qa'ida as a group, strategic counterterrorism efforts will need to focus on how and why a successor terrorist group might evolve during the remaining years of the "Islamic terrorist wave."

On a positive note, support for terrorist networks in the Muslim world appears to be declining. To succeed, terrorist groups need a large number of passive supporters who sympathize with terrorists' objectives. Reducing those numbers is key to lessening the appeal within societies. Analysis of terrorists' communications among themselves indicates they see themselves in a "losing" battle with Western materialistic values. Surveys and analysis of jihadist websites indicate growing popular dissatisfaction with civilian casualties—particularly of fellow Muslims—caused by terrorist actions.

For those terrorist groups active in 2025, the diffusion of technologies and scientific knowledge will place some of the world's most dangerous capabilities within their reach. The globalization of biotechnology industries is spreading expertise and capabilities and increasing the accessibility of biological pathogens suitable for disruptive attacks. Radiological and chemical weapons may also be used by terrorists or insurgents seeking an advantage against opposing security or military forces and to create mass casualties. The proliferation of advanced tactical weapons will increase the potential that they will be used by terrorists. Improved anti-tank guided missiles and other man-portable weapon systems, thermobaric and other advanced explosives, and the spread of cheap sensors and robotics that could be used to create more capable improvised explosive devices illustrate this danger.

Some governments will likely respond to increasing terrorism and internal threats by expanding domestic security forces, surveillance capabilities, and the employment of special operations-type forces. Counterterrorism and counterinsurgency missions increasingly will involve urban operations as a result of greater urbanization. Governments, citing the need for enhanced internal security and their desire to control the influx of unwanted refugees and immigrants, may increasingly erect barricades and fences around their territories to inhibit access. Gated communities will continue to spring up

The Changing Character of Conflict

Conflict will continue to evolve over the next 20 years as potential combatants adapt to advances in science and technology, improving weapon capabilities, and changes in the security environment. Warfare in 2025 is likely to be characterized by the following strategic trends:

The Increasing Importance of Information. Advances in information technologies are enabling new warfighting synergies through combinations of advanced precision weaponry, improving target and surveillance capabilities, enhanced command and control, and the expanding use of artificial intelligence and robotics. Future proliferation of long-range precision weapons will permit a growing number of states to threaten rapid destruction of an adversary's critical economic, energy, political, and military and information infrastructures. The growing importance of information technologies as an enabler of modern warfighting capabilities will make information itself a primary target in future conflicts. By 2025 some states probably will deploy weapons designed to destroy or disable information, sensor, and communication networks and systems including anti-satellite, radiofrequency, and laser weapons.

The Evolution of Irregular Warfare Capabilities. The adoption of irregular warfare tactics by both state and nonstate actors as a primary warfighting approach in countering advanced militaries will be a key characteristic of conflicts in 2025. The spread of light weaponry, including precision tactical and man-portable weapon systems, and information and communication technologies will significantly increase the threat posed by irregular forms of warfare over the next 15-20 years. Modern communication technologies such as satellite and cellular phones, the Internet, and commercial encryption, combined with hand-held navigation devices and high-capacity information systems that can contain large amounts of text, maps, and digital images and videos will greatly enable future irregular forces to organize, coordinate, and execute dispersed operations.

The Prominence of the Non-military Aspects of Warfare. Non-military means of warfare, such as cyber, economic, resource, psychological, and information-based forms of conflict will become more prevalent in conflicts over the next two decades. In the future, states and nonstate adversaries will engage in "media warfare" to dominate the 24-hour news cycle and manipulate public opinion to advance their own agenda and gain popular support for their cause.

The Expansion and Escalation of Conflicts Beyond the Traditional Battlefield. Containing the expansion and escalation of conflicts will become more problematic in the future. The advancement of weapons capabilities such as long-range precision weapons, the continued proliferation of weapons of mass destruction, and the employment of new forms of warfare such as cyber and space warfare are providing state militaries and nonstate groups the means to escalate and expand future conflicts beyond the traditional battlefield.

within many societies as elites seek to insulate themselves from domestic threats.

Afghanistan, Pakistan, and Iraq: Local Trajectories and Outside Interests

Developments in Afghanistan, Pakistan, and Iraq will critically affect regional stability, if not the global order. By 2025, the trajectories of these three states probably will have diverged sharply.

In 2025, **Afghanistan** may still evince significant patterns of tribal interaction and conflict. With the exception of the Taliban interlude, Afghanistan has not experienced strong central authority; centrifugal forces are likely to remain strong even if Kabul increases its sway.

- Western-driven infrastructure, economic assistance, and construction are likely to provide new stakes for local rivalries rather than the basis for a cohesive Western-style economic and social unity.

- Globalization has made opium Afghanistan's major cash crop; the country will have difficulty developing alternatives, particularly as long as economic links for trade with Central Asia, Pakistan, and India are not further developed.

Tribal and sectarian disputes probably will continue to arise, be fought out, and shift constantly in Afghanistan as the various players realign themselves. Outsiders will choose between making temporary alliances to destroy terrorist enemies, gain access to local resources, and advance other immediate interests or more ambitious—and costly—goals.

The future of **Pakistan** is a wildcard in considering the trajectory of neighboring Afghanistan. Pakistan's Northwest Frontier Province and tribal areas probably will continue to be poorly governed and the source or supporter of cross-border instability. If Pakistan is unable to hold together until 2025, a broader coalescence of Pashtun tribes is likely to emerge and act together to erase the Durand Line,[8] maximizing Pashtun space at the expense of Punjabis in Pakistan and Tajiks and others in Afghanistan. Alternatively, the Taliban and other Islamist activists might prove able to overawe at least some tribal politics.

In **Iraq,** numerous ethnic, sectarian, tribal, and local notables will compete to establish and maximize areas of political and social authority, access to resources, and to control the distribution of those resources through their patronage networks.

- By 2025 the government in Baghdad could still be an object of competition among the various factions seeking foreign aid and pride of place, rather than a self-standing agent of political authority, legitimacy, and economic policy.

What happens in Iraq will affect neighbors as well as internal contestants. Iran, Syria, Turkey, and Saudi Arabia will have increasing difficulty staying aloof. An Iraq unable to maintain internal stability could continue to roil the region. If conflict there breaks into civil war, Iraq could continue to provide a strong demonstration of the adverse

[8] The Durand Line is the border between Pakistan and Afghanistan—an artificial division that the Afghan Government does not recognize.

End of Ideology?

We judge that ideological conflicts akin to the Cold War are unlikely to take root in a world where most states will be preoccupied with the pragmatic challenges of globalization and shifting global power alignments. The force of ideology is likely to be strongest in the Muslim world—particularly the Arab core where Islam's diverse expressions will continue to influence deeply social norms and politics as well as serve as a prism through which individuals will absorb the economic and cultural forces of globalization. Increasing religious observance and the failures of secular Arab nationalism will leave Islamic political and social movements best positioned to assert ideological influence over governments and publics in much of the Muslim world over the next 15-20 years.

The ensuing Islamic discourse will be increasingly fluid as the clerical leadership detaches from established seats of learning and traditions of jurisprudence and asserts its own interpretations of the Quran and the Hadith (oral tradition). The trend toward bypassing tradition, aided by the spread of media technologies, will encourage the spread of Salafism (reverence for the earliest period in Islam), including its most radical forms, which risks undermining Western allies in the Muslim world, especially in the Middle East. Nonetheless, the dispersal of religious authority into networks of like-minded thinkers also could set the stage for a revival of innovative perspectives on Islam's relationship to the modern world and provide a counterweight to the radical trend.

The direction of Islam's internal ideological struggle will be determined primarily by local conditions. In countries where economic and demographic trends are favorable and publics and governments opt for the benefits of globalization, there will be strong incentives to revive and broaden Islamic teachings that promote a culture of innovation, scientific learning, political experimentation, and respect for religious pluralism. In those countries that are likely to struggle with youth bulges and weak economic underpinnings—such as in Afghanistan, Nigeria, Pakistan, and Yemen—the radical Salafi trend is likely to gain traction.

consequences of sectarianism to other countries in the region. Alternatively, a stable Iraq could provide a positive example of economic growth and political development.

- All players will look to the United States to guarantee stability, but Tehran will continue to fear US designs for Iran's own regime and sovereignty.
- Public opinion polls likely will continue to suggest popular adherence to being "Iraqi," but the persistence of competing security systems, social organizations, and economic subsistence networks will animate robust local and sectarian identities.

The **Sunnis** will have an interest in the central state only if it provides them with what they judge to be an adequate share of resources largely generated outside their areas of control. Absent this satisfaction, agitation by Sunni jihadists, tribal leaders, and other notables could remain a destabilizing factor. In addition, any significant increase in the number of Iraqi Sunnis emigrating to Jordan and Syria could jeopardize the stability of those countries.

Shi'a, flush with their newfound primacy, have historically been divided, and personal rivalries among the Sadrs, Hakims, and other Shi'a notables are likely to continue to color politics in this community. Tribes of mixed Sunni-Shi'a ethnicity could serve as an integrating intercommunal glue, but only if economic development leads to a more transparent and trustworthy central administration and national system for material production and distribution.

Development of a well-integrated national army would be an important factor in maximizing prospects for a more functional Iraqi state. This would require replacing the current tribal and sectarian loyalties of officers and troops with a much more robust sense of corporate élan and national purpose.

Potential Emergence of a Global Pandemic

The emergence of a novel, highly transmissible, and virulent human respiratory illness for which there are no adequate countermeasures could initiate a global pandemic. If a pandemic disease emerges by 2025, internal and cross-border tension and conflict will become more likely as nations struggle—with degraded capabilities—to control the movement of populations seeking to avoid infection or maintain access to resources.

The emergence of a pandemic disease depends upon the natural genetic mutation or reassortment of currently circulating disease strains or the emergence of a new pathogen into the human population. Experts consider highly pathogenic avian influenza (HPAI) strains, such as H5N1, to be likely candidates for such a transformation, but other pathogens—such as the SARS coronavirus or other influenza strains—also have this potential.

If a pandemic disease emerges, it probably will first occur in an area marked by high population density and close association between humans and animals, such as many areas of China and Southeast Asia, where human populations live in close proximity to livestock. Unregulated animal husbandry practices could allow a zoonotic disease such as H5N1 to circulate in livestock populations—increasing the opportunity for mutation into a strain with pandemic potential. To propagate effectively, a disease would have to be transmitted to areas of higher population density.

Under such a scenario, inadequate health-monitoring capability within the nation of origin probably would prevent early identification of the disease. Slow public health response would delay the realization that a highly transmissible pathogen had emerged. Weeks might pass before definitive laboratory results could be obtained confirming the existence of a disease with pandemic potential. In the interim, clusters of the disease would begin to appear in towns and cities within Southeast Asia. Despite limits imposed on international travel, travelers with mild symptoms or who were asymptomatic could carry the disease to other continents.

Waves of new cases would occur every few months. The absence of an effective vaccine and near universal lack of immunity would render populations vulnerable to infection.[a] In this worst-case, tens to hundreds of millions of Americans within the US Homeland would become ill and deaths would mount into the tens of millions.[b] Outside the US, critical infrastructure degradation and economic loss on a global scale would result as approximately a third of the worldwide population became ill and hundreds of millions died.

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[a] US and global health organizations currently are working to develop vaccines that may prevent or mitigate influenza pandemics. A breakthrough in the next several years could reduce the risk posed by pandemic influenza during upcoming decades.

[b] How fast a disease spreads, how many people become sick, how long they stay sick, the mortality rate, and the symptoms and after-effects will vary according to the specific characteristics of whatever pathogen is responsible for a pandemic. This scenario posits plausible characteristics that fall within a range of possibilities for these variables.

Global Scenario III: *BRICs' Bust-Up*

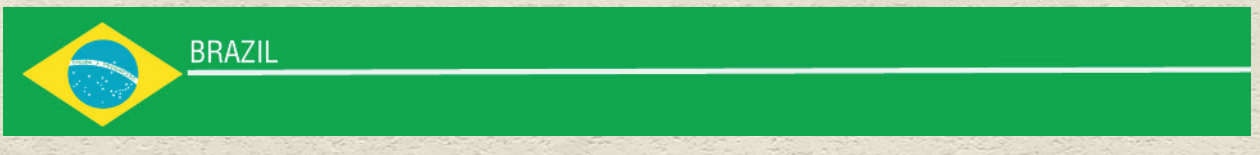
In this fictionalized scenario, Chinese fears of disruption of China's energy supplies spark a clash with India. With increasing resource constraints likely out to 2025, disputes over resources appear to us to be a growing potential source of conflict. The sense of vulnerability is heightened by the dwindling number of energy producers and increasing concentration in unstable regions such as the Middle East. A world in which there are more confrontations over other issues—such as new trade barriers—is likely to increase the potential for any dispute to escalate into conflict. As outlined in this scenario, misperceptions—along with miscommunications—could play as important a role as any actual threats. Also illustrated by this scenario is the competition by rising powers for resources. Both China and India—though rich in coal—have limited and dwindling oil and gas reserves and must rely on foreign sources. In thinking about the increased potential for conflict in this multipolar world, we need to keep in mind the scope for the emerging powers to clash with one another.

Preconditions underpinning this scenario include:

- A steady period of growth has slowed as states struggle to cope with energy and resource shortages, which are particularly acute in the Asian economies.

- A rise in nationalist sentiments occurs with the intense energy competition in this zero-sum world.

- A balance of power emerges that resembles a 21st century replay of the years before 1914.



Letter by current Foreign Minister to former Brazilian President
February 1, 2021

I once heard a story—though I don't know whether it is true—that Goldman Sachs added Brazil as an afterthought to the now-famous grouping of emerging powers or BRICs. Rumor has it that they needed a fourth country, preferably from the southern hemisphere since the others were in the north. It also helped that Brazil began with a B.

True or not, Brazil has pulled its weight over the past six months, performing feats of diplomacy that even the US could not equal in present circumstances.

Let me go back to the beginning even though a lot of this you probably know. In fact, to get to the root of the Sino-Indian clash one has to go back to before there was any news coverage of the events. A lot of little incidents led to the Chinese attack on two Indian warships near the Gulf of Oman, which in turn triggered the US attack disabling the Chinese ships as they tried to withdraw from the area.

For a couple years, the Chinese had been watching what from their standpoint was a dangerous confluence of events that could jeopardize their economic, and therefore political survival. First, the Japanese had been making considerable progress in increasing their sea control capabilities in contested ocean areas that looked promising for producing oil and gas.

Second, there had been a notable acceleration in Indian military modernization as well as Indian attempts to erode Chinese gains in influence in Southeast Asia, increasing India's sea denial capabilities in the areas through which oil and gas move to China from the Middle East. China responded, extending its naval presence in the region by establishing naval basing rights in Pakistan. It became clear that Beijing's strategy was to deter any attempts by India to cut off China's sea access to energy resources by creating a threat to India's sea lanes in return. Tensions between India and China increased sharply when a Chinese submarine disappeared without explanation while monitoring an Indian naval exercise.

Third, Sino-Russian ties were simultaneously taking a tumble despite earlier cooperation in the Shanghai Cooperation Organization. Beijing detected increasing signs of Russia undercutting Chinese relations with Central Asian energy producers. This stoked Chinese energy insecurity. The fact that emerging alternative energy technologies—clean coal, solar, wind, and geothermal—did not materialize after heavy Chinese and US investments did not help.

As you know, even before the Sino-Indian incident, there had been a skirmish or two last year between the Chinese and Russians in Russia's Far East. If the Chinese had feared Russian double-dealing in Central Asia, the Russians were just as paranoid about what the Chinese were up to in Russia's Far East. Russia's accusation of spying by a group of students from Beijing and their subsequent imprisonment in Vladivostok occasioned, as

you well remember, the spectacular Chinese rescue effort which thoroughly humiliated the Russians. Some called it a second Port Arthur in reference to the Japanese sinking the Russian fleet in 1905.

Finally, the strategic competition for influence and access to energy that emerged in the Middle East provided a new backdrop for the increasing rivalry among China, India, and Russia. As the United States reduced its military forces in the Middle East following its involvement in Iraq, the other great powers sought to fill the vacuum. The Gulf Arab states in particular sought to strengthen their relationships with other powers to compensate for what they perceived as a weakened US security commitment post Iraq.

Tensions in the Middle East meanwhile were building as Iran continued to exert its growing power. A crisis erupted after a series of naval incidents between Iranian and Arab naval forces in the Persian Gulf and the Iranian threat to close off access to the Persian Gulf to all naval forces from outside the region except those of “friendly” powers. In response the United States introduced new economic sanctions against Tehran and sought to conduct an embargo of arms shipments to Iran. Tehran countered by threatening to disrupt oil traffic through the Gulf if Washington did not back down.

US pressure on the Chinese, Indians, and others to reject Iranian blandishments and eschew trade with the Iranians was intense. Beijing, fearing a disruption of its energy supplies, sought to play both sides, maintaining good relations with the Saudis while also promising Iran its support. China had established years back a strategic reserve, but that would last only so long and the uncertainty about what happened after a couple months was putting political pressure on the government. New Delhi also sought to nuance its response noting its need for natural gas from Iran but also seeking to maintain its good relationships with the United States and the Arab states. As a result, India declined to participate in economic sanctions that were deemed to be most harmful to ordinary Iranian citizens but agreed to help the United States enforce an arms embargo of Iran.

You can see how this set the stage for the incident at sea. Chinese nerves were on edge, but the Chinese were feeling very confident after the Russian Far East affair. The Indian attempt to stop a Chinese vessel believed to be carrying new antiship cruise missiles to Iran was resisted by Chinese naval forces in the area. The Chinese saw the Indian warships as surrogates for the United States. The US attack confirmed it. The original crisis in the Middle East—which really pitted the US and Europe against Iran—was suddenly transformed into a serious global one.

Fortunately over the past few weeks, unlike 1914, all the powers drew back from the brink. But oil is now over $300 a barrel and stock markets are tanking everywhere. That gets me to the Brazilian angle. We were the only country of any stature that had the trust of all the others. Even the Europeans were discredited because of their links to the US in the Iranian crisis. China was desperate to find a way out of what could have been an even worse position if a full-scale conflict with the Indians and the United States had ensued. The US too wanted a face-saving way out of the impasse since it looked like the only victor would be the Iranians and to an extent the Russians who sat smugly on

the sidelines, reaping a fortune from the spike in energy prices. Of course, our continued development of biofuels in a responsible way only added to our credibility.

In the negotiations, I have tried to do more than just get all sides to back off and pay compensation to one another for the damages to each others' fleets. China needs to be assured about energy flows from the Gulf—at least once they resume.

I'm not sure that I have succeeded in building up mutual confidence and trust. I sense that the militaries in all three places—the US, China, and India—will use the incident to push for greater militarization of energy security. We could experience a new naval arms race.

In China, the government still fears public retribution because of the humiliation suffered by the US attack. Of course, for the moment, the US is the target of the nationalistic outburst—the United States' new embassy is a charred ruin. The Iranians have let up some, particularly as the US and its European partners made some concessions to get the oil flowing again and defuse the crisis with China and India.

I've told the three—the US, India, and China—that the next round of talks has to be held here in Rio. I'm hoping a more convivial atmosphere will do the trick. Rio Carnival is around the corner…

Chapter 6

Will the International System Be Up to the Challenges?

The trend toward greater diffusion of authority and power occurring for a couple decades is likely to accelerate because of the emergence of new global players, increasingly ineffective institutions, growth in regional blocs, advanced communications technologies, and enhanced strength of nonstate actors and networks.

- By 2025, nation-states will no longer be the only—and often not the most important—actors on the world stage and the "international system" will have morphed to accommodate the new reality. But the transformation will be incomplete and uneven. Although states will not disappear from the international scene, the ***relative power*** of various nonstate actors—including businesses, tribes, religious organizations, and even criminal networks—will grow as these groups influence decisions on a widening range of social, economic, and political issues.

The growing multiplicity of actors could strengthen the international system by filling gaps left by aging post-World War II institutions, but it also has the potential to further fragment the existing system and to impede international cooperation. The diversity in both types and kinds of actor increases the likelihood of fragmentation over the next two decades given the apparently waning ability of legacy international institutions to address new transnational challenges.

Multipolarity without Multilateralism

In such a world, we are unlikely to see an overarching, comprehensive, unitary approach to global governance. Current trends suggest that global governance in 2025 will be a patchwork of overlapping, often ad hoc and fragmented efforts, with shifting coalitions of member nations, international organizations, social movements, NGOs, philanthropic foundations, and companies.

- This fragmentation of interests and actors will further erode prospects for the United Nations to strengthen consensus among its members for effective multilateral action—particularly within the current or an expanded Security Council—or for sustaining broader reforms of the UN system.

- This multipolarity is also unlikely to include a single dominant nation-state with the overwhelming power and legitimacy to act as the agent of institutional overhaul. (See below for discussion of the role of the US.)

Most of the pressing transnational problems—including climate change, regulation of globalized financial markets, migration, failing states, crime networks, etc.—are unlikely to be effectively resolved by the actions of individual nation-states. The need for effective global governance will increase faster than existing mechanisms can respond. Leaders will pursue alternative approaches to solving transnational problems—with new institutions, or more likely, many informal groupings. Recent trends suggest that existing multilateral institutions—which are large and cumbersome—will have difficulty adapting quickly enough to undertake new missions, accommodate changing memberships, and obtain necessary resources. NGOs and philanthropist foundations—concentrating on specific issues—increasingly will be a part of the landscape but are likely to be limited in their ability to effect change in the absence of concerted efforts by multilateral institutions or governments.

Quests for greater inclusiveness—to reflect the emergence of newer powers—may make it harder for international organizations to

tackle transnational challenges. Respect for the dissenting views of member nations will continue to shape the agenda of organizations and limit the kinds of solutions possible. Large and enlarging organizations—from the UN General Assembly to NATO and the EU—may find the challenges to be particularly difficult. There is unlikely to be any effort to "zero base" the international organizational structure such that some organizations go away or are reinvented.

Effective action also may be impeded by the existence of too many institutions—many of which have declining purpose—with limited legitimacy and effectiveness. This is likely to apply across the board, from Western-driven institutions to those of the historic Third World.

We anticipate that arms races, territorial expansion, and military rivalries that characterized late 19th century multipolarity will be less significant in the emerging one, but we cannot rule out such possibilities. For most countries, strategic rivalries are likely to revolve around trade, investment, technology innovation, and acquisition. However, increasing worries about resources—such as energy or even water—could easily put the focus back on territorial disputes or unresolved border issues.

Asia is one region where the number of such border issues is particularly noteworthy or, in the case of Central Asia, where large deposits of energy resources increase the potential for a repeat of the 19th century's "Great Game" with outsiders contending for the exclusive right to control market access. The fact that a number of countries may experience a sharp fall in national power if alternatives for fossil fuel are developed quickly injects a potentially dangerous risk of instability. As the national power of China, India, and others grows, smaller countries in the neighborhood may seek outsiders' protection or intervention in a balancing effort.

How Many International Systems?

The emerging powers, particularly China and India, have a shared interest in maintaining a stable and open order, but they espouse different "means." Their spectacular economic success has been achieved with an economic model that is at odds with the West's traditional laissez faire recipe for economic development. As we have seen, climate change, energy, and other resource needs are likely to be more problematic for what many see as their primary goal of continued economic development. Given these differing perspectives, the question arises as to whether the new players—and their alternative approaches—can be melded with the traditional Western ones to form a cohesive international system able to tackle the increasing number of transnational issues.

While sharing a more state-centric view, the national interests of the emerging powers are diverse enough, and their dependence on globalization compelling enough, that there appears little chance of an alternative bloc forming among them to directly confront the more established Western order. The existing international organizations—such as the UN, WTO, IMF, and World Bank—may prove sufficiently responsive and adaptive to accommodate the views of emerging powers, but whether the emerging powers will be given—or will want—additional power and responsibilities is a separate question. Indeed some or all of the rising powers may be content to take advantage of the institutions without assuming leadership burdens commensurate with their status. At the same time, their membership does not necessarily have to involve heavy responsibilities or burden-sharing, allowing them to pursue their goals of economic development. For some, the fact that agreement on new permanent

Greater Regionalism—Plus or Minus for Global Governance?

One exception to the trend toward greater multipolarity with less multilateralism may occur on a regional level in Asia. Greater Asian integration, if it occurs, could fill the vacuum left by a weakening multilaterally based international order but could also further undermine that order. In the aftermath of the 1997 Asian financial crisis, a remarkable series of pan-Asian ventures—the most significant being ASEAN + 3—began to take root. Although few would argue that an Asian counterpart to the EU is a likely outcome even by 2025, if 1997 is taken as a starting point, Asia arguably has evolved more rapidly over the last decade than the European integration did in its first decade(s). In the economic realm, extra-regional players such as the US will continue to be a significant part of the 2025 Asian economic equation. However, movement over the next 15 years toward an Asian basket of currencies—if not an Asian currency unit as a third reserve—is more than a theoretical possibility.

- Such a development would be in part an effort by Asians to insulate themselves from financial volatility outside their region, facilitate economic integration, and to achieve greater representation at the global table.

- Aspects of Asian regionalism that are difficult to quantify include the growing habits of cooperation, buoyant confidence, frequency of encounters by a host of high-level officials and the cultural diffusion that is bridging historical and political differences and is engendering a new sense of community.

Asian regionalism would have global implications, possibly sparking or reinforcing a trend toward three trade and financial clusters that could become quasi-blocs (North America, Europe, and East Asia).

Establishment of such quasi-blocs also would have implications for the ability to achieve future global World Trade Organization agreements and regional clusters could compete in the setting of trans-regional product standards for IT, biotech, nanotech, intellectual property rights, and other "new economy" products.

An Asian regional energy posture could set the terms for the rest of the world. Some two-thirds of Mideast oil exports go to Asia, and some 70 percent of Asian imports are from the Middle East. This pattern is likely to intensify. Whether this nexus is primarily commercial—complementary investments and military sales—or acquires an increasingly political/strategic character could determine the character of the international system.

- As stated, in the worst case—absent greater regional cooperation—concern over oil supply routes could lead to a China-Japan-India naval arms race.

Developments in the security realm—where Asian integration is currently weakest and where trends toward competition and hedging persist—could dilute regionalism. Whether and how Korea is reunified and the status of its nuclear program, and whether Taiwan's relationship to the Mainland moves toward conflict or is resolved peacefully, will be key factors shaping regional

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dynamics. Current trends suggest traditional security concerns are declining in importance but may be replaced by new issues, such as competition over resources. Managing and adjusting to a transition to a reunified Korea could expand the Six-Party talks into a mechanism that features new levels of cooperation among the US, Japan, and China.

Whether greater or lesser integration occurs also depends largely on the future character of Sino-Japanese ties. This is the first time in modern history that China and Japan have been major regional and global actors at the same time. A key question is whether they can transcend historical suspicions and compete peacefully. Peaceful resolution of the Korea and Taiwan disputes and a Franco-German type entente between China and Japan would sharply diminish the regional desire for a US "offshore" balancer role. However, US allies and security partners in the region will not trade in the US balancing role for any collective regional security arrangement until the political and economic consequences of China's rise become better known.

members of the Security Council appears remote even over the next 15-20 years provides an additional excuse to forego a global role which could come at the expense of domestic goals. One large uncertainty is whether the political will exists to reshape the international system to offer the emerging powers enough responsibility for them to shoulder more global burdens.

"Most experts…do not expect the rising powers to challenge or radically alter the international system…"

Most experts—US and foreign—we consulted do not expect the rising powers to challenge or radically alter the international system as did Germany and Japan in the 19th and early 20th centuries. The emerging powers will have a high degree of freedom to "customize" their political and economic policies rather than fully adopting Western norms. Because of their growing geopolitical clout, domestic markets, and roles in global resource extraction, manufacturing, finance, and technology, the rising powers are also likely to want to preserve their policy freedom to maneuver and will want others to carry the burden of dealing with global challenges such as terrorism, climate change, proliferation, and energy security. Russia's and China's resource nationalism and state capitalism underpin, for example, their elite-based politics and limit their willingness to compromise on major international economic issues such as trade, energy, finance, or climate change.

- Others, such as India, lack strategic economic and political visions and do not possess domestic grassroots support for deep economic liberalization. Many global issues require sacrifices or abrupt changes to these countries' development plans, another reason for them to prefer to be bystanders rather than leaders in a multilateral system.

A World of Networks

In response to likely deficits in global governance, networks will form among states and nonstate actors focused on specific issues. These networks will operate to pursue convergent goals and interests, including a genuine intent to solve problems, business self-interest, moral grounds, and the desire of

international organizations and NGOs to be relevant to the problems facing a changing world. In some cases, the nucleus of an issue network will be a national or international commission or body of experts—unelected but with substantial clout—to report on or oversee some aspects of governance, trade, or other issues. Current examples of such networks include the Financial Stability Forum, the Carbon Sequestration Leadership Forum, and the International Partnership for the Hydrogen Economy.

Issue groups likely will help develop and diffuse standards and regulations for various realms, including information technology (IT), regulatory regimes, and management of the "new post-industrial economy." For some kinds of issues, the networks likely will provide the basis for agreement among nation-states. With the groundwork done in informal contexts, nation-states will be able to adopt problem-solving measures, gaining legitimacy and sometimes taking credit for initiatives, while avoiding the stigma of solutions being imposed by external international organizations. The numbers and types of NGOs could well explode by 2025. Low entry costs, low overhead, and the capacity of individuals and groups to affiliate with each other using the Internet will facilitate such collectives.

In addition to such issue groups, a new set of social actors—super-empowered individuals and even criminal networks—increasingly will influence outcomes. These elites are empowered by their wealth and an array of national and transnational contacts—oftentimes spanning businesses, governments, international organizations, and NGOs. Using their broad contacts and multiple national identities, they help leverage "transnational" outcomes across national and organizational boundaries.

"Although religious groups have been a great beneficiary of globalization, religion also has the potential to be a primary vehicle for opposition to that same modernizing process."

A Growing Role for Religion. Religion-based networks may be quintessential issue networks and overall may play a more powerful role than secular transnational groupings in exerting influence and shaping outcomes in the period out to 2025. Indeed, we could be entering a new age of clerical leadership in which religious leaders become major power brokers in resolving future international disputes and conflicts.

- Rich rewards in power and influence already fall to those religious entrepreneurs and televangelists who span the two hemispheres, the Global South and North—Amir Khalede for Muslims and Matthew Ashimolowo or Sunday Adelaja for Christians. Khalede's website is the third most popular Arabic website in the world (al-Jazeera's is number one).

Within the Christian tradition, the emergence of whole new patterns of authority and leadership across the Global South entails autonomous ministers and religious entrepreneurs, whose activities reap high status and great wealth. Before 2025, some evangelists and megachurch preachers probably will seek to become the leaders of nations, especially if those countries have been economically devastated during a global downturn.

Although religious groups have been a great beneficiary of globalization, religion also has the potential to be a primary vehicle for opposition to that same modernizing process. Religious structures can channel social and political protest, especially for those who lack the means of communication and influence

Proliferating Identities and Growing Intolerance?

One aspect of the growing complexity of the international system is that no single political identity—such as the conflation of citizenship and nationality—is likely to be dominant in most societies by 2025. Class struggles will matter as much as religion and ethnicity. The Internet and other multi-media will enable the revitalization of the reach of tribes, clans, and other fealty-driven communities. Explosive urbanization will facilitate the spread of these identities and increase the likelihood of clashes between groups. The increasing numbers of migrants moving to cities from rural areas will coalesce in neighborhoods settled by previous co-ethnics or will find themselves targeted for recruitment by gangs and more complex criminal structures. As these communities coalesce and become "self-governing" or sometimes co-opted by organized crime groups, state and local government will face "no-go" areas in many large cities as has already happened in cities like Sao Paulo and Rio de Janeiro.

Although inherited and chosen layers of identity will be as "authentic" as conventional categories of citizenship and nationality, one category possibly will continue to stand out. Islam will remain a robust identity. Sectarian and other differences within Islam will be a source of tension or worse. The challenge of Islamic activism could produce a more intense backlash of Christian activism. Nigeria, Ethiopia, and other places in Africa will remain battlegrounds in this sectarian struggle. In 2025, notions of multiethnic integration and the value of "diversity" could face a combination of challenges from nationalists, religious zealots, and perhaps some version of a revived Marxist and other class-based or secular ideology.

available to social elites. This is relevant because many of the economic trends that will dominate the next two decades have the potential to drive social fragmentation and popular resentment, including the growing gaps between rich and poor, the urban and rural gulfs in India and China, the vast disparities between nations and regions advantaged or left behind by modernization, and between states able to manage the consequences of globalization and those with governments unable to do so. Religious activists can draw on sacred texts and long historical tradition to frame popular grievances in terms of social justice rhetoric and egalitarianism.

If global economic growth did suffer a severe reverse—akin to the Indonesian crisis of the late 1990s but on a worldwide scale—religiously based rural insurgencies and ethnic struggles probably would ensue in a number of countries including Brazil, India, China, and in much of Africa. If even the moderately severe projections of climate change are correct, the impacts could spur religious conflict through large sections of Africa and Asia. Among the countries at greatest risk of such conflict and scapegoating of minority communities are a number of predominantly Muslim countries with significant Christian minorities (Egypt, Indonesia, and Sudan); predominately Christian states with substantial Muslim minorities (e.g., DROC, Philippines, and Uganda) or finely balanced between Christian and Muslim (Ethiopia, Nigeria, and Tanzania).

If religious structures offer vehicles to resist globalization, they also help people cope with those same forces, enhancing social stability and economic development. Without religious safety nets, the degree of chaos and fragmentation in developing nations would be

Future of Democracy: Backsliding More Likely than Another Wave

We remain optimistic about the long-term prospects for greater democratization, but advances are likely to slow and globalization will subject many recently democratized countries to increasing social and economic pressures that could undermine liberal institutions.

- Ironically, economic setbacks could enhance prospects for movement toward pluralism and greater democratization in China and Russia. The Chinese Communist Party's legitimacy increasingly rests on its ability to ensure greater material wealth for Chinese society. Resentment of elite corruption is already on the rise but may overwhelm the regime in event of a serious economic crisis. The government's standing in Russia would be similarly challenged if living standards fell dramatically.

- Elsewhere surveys have shown democracy having taken root, particularly in Sub-Saharan Africa and Latin America, where opinion views it positively independent of any material benefits. Still, nascent democracies have historically been shown to be unstable to the extent that they lack strong liberal institutions—especially rule of law—which can help support democracy during economic downturns. Case studies suggest widespread corruption is especially threatening because it undermines faith in democratic institutions.

- As we have suggested elsewhere in the text, the better economic performance of many authoritarian governments could sow doubts among some about democracy as the best form of government. The surveys we consulted indicated that many East Asians put greater emphasis on good management, including increasing standards of livings, than democracy. Elsewhere even in many well-established democracies, surveys show growing frustration with the current workings of democratic government and questioning among elites over the ability of democratic governments to take the bold actions necessary to deal rapidly and effectively with the growing number of transnational challenges.

far worse. As predominantly rural societies have become more urban over the last 30 or 40 years, millions of migrants have been attracted to larger urban complexes without the resources or infrastructures to provide adequate healthcare, welfare, and education. The alternative social system provided by religious organizations has been a potent factor in winning mass support for religion. This holds across faiths.

The weaker the state and its mechanisms, the more critical the role of religious institutions and the stronger the appeal of religious ideologies, usually of a fundamentalist or theocratic nature.

A "Shadow" International System by 2025?
Further fragmenting the international system is the threat posed by growing transnational criminal networks in managing the world's resources—especially global energy, minerals, and other strategic markets—in addition to their traditional involvement in international narcotics trafficking. Increased demand for energy worldwide provides opportunities for criminals to expand their activities through direct ties to energy suppliers and leaders of countries where suppliers are located. With energy supplies increasingly concentrated in countries with poor governance, longstanding practices of corruption, and an absence of the rule of law, the potential for penetration by organized crime is high.

- The illicit activities of organized crime in the energy sector provide affiliated companies with an unfair competitive advantage in the global energy market.
- Over time, given their far-reaching tentacles into government offices and corporate board rooms, criminals may be in a position to control states and influence market actions, if not foreign policies. For many resource-rich countries, energy revenues provide the basis for the whole economy and energy policies are a key consideration in foreign policy decisions.
- The likelihood of penetration by criminal networks is probably greatest in Eurasian markets where organized crime has been an institutionalized part of the political and economic environment and where over time organized crime figures have evolved into influential businessmen and become valuable partners for corrupt officials.
- As Russian and Eurasian suppliers capture a larger and larger portion of the energy markets in Europe and Asia, we expect these organized crime networks to expand their operations, fostering greater corruption and manipulation of foreign policies to their advantage.

Global Scenario IV: Politics Is Not Always Local

In this fictionalized scenario, a new world emerges in which nation-states are not in charge of setting the international agenda. The dispersion of power and authority away from nation-states has fostered the growth of sub-national and transnational entities including social and political movements. Growing public concerns about environmental degradation and government inaction come together in this example to "empower" a network of political activists to wrest control of the issue out of country-level officials in capitals. Global communications technology enables individuals to affiliate directly with identity-driven groups and networks that transcend geographic boundaries. Environmentalism is an issue for which there is a widespread confluence of interests and desires.

Preconditions for this scenario include:

- National governments' relevance and power lessens in an increasingly decentralized world.
- Diasporas, labor unions, NGOs, ethnic groups, religious organizations, and others acquire significant power and establish formal and informal relationships with states.
- Communications technology permits ubiquitous and constant integration into identity networks.

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Politics is Not Always Local
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We are in a new era in which governments are no longer king. All of us commentators talked a lot about the end of the Westphalian era, but we never really believed it. Moreover it was harder to get our arms around nonstate actors than to report on government ministries with their solid granite foundations and columned porticos. Now we have to recognize the new force of these loose networks. Unlike governments, they actually got something done. They have shown they really matter. I'm talking about the new climate change treaty that was recently agreed upon—even before the previous one expired—that instituted stricter carbon emissions ceilings and established global programs for renewable energy and new technologies to deal with the increasing water supply problems.

Of course, there is no single network and maybe that is the secret. Not only were there various national groups, but many of the networks responsible for forcing the climate change negotiations collected together professional groups, NGOs, and religious groups, across national, class, and cultural divides. The wide deployment of the next-generation Internet (Ubiquitous computing), although done for commercial reasons, greatly facilitated the empowerment of these nonstate interest groups.

This probably would not have come about without a succession of environmental disasters. The New York hurricane was a trigger. Importantly the fact that it happened about the time of UNGA, which many of these networks and groups had been scheduled to attend, facilitated the initial coalescence. However, it would not have happened without other events like the cyclone a year earlier that devastated Bangladesh and the recent Intergovernmental Panel on Climate Change report showing much higher levels of CO2 despite efforts at cutbacks. A crisis atmosphere prevailed. Indeed it was one of those moments in history in which a new millennium or apocalyptic atmosphere was operating—as if the end of the world was nigh—and immediate action was needed.

In a sense, we have reached the Promised Land in which global cooperation is more than a "conspiracy" among elites but bubbles up from the grassroots across historic national and cultural divides. We had hoped for this with the European Union but never achieved it. Everyone maintained his narrow parochial viewpoint, speaking first as a Frenchman, or Pole, not as a European.

A lot of this can be ascribed to the rise of the middle classes in Russia, China, and India. Like their Western counterparts before them in the 19th and 20th centuries, they are wealthy enough now to decry the health hazards associated with pollution and rapid growth. They wanted their governments to take action, but they did not. The middle classes have been incensed by the shoddy construction and poor planning that

led directly to large numbers of casualties when disasters struck. Anti-corruption and environmentalism merged. As the poor in Sub-Saharan Africa and elsewhere suffered more and more from climate change, religious activists also became mobilized. Migrants pushed off unproductive land, and unable to get access to clean water technologies, turned to churches for help.

Institutions were more savvy than governments in detecting the change. The annual Davos meeting was transformed several years ago. It brought in a host of activists from these networks and has since established virtual meetings where thousands more could participate. The pressure became too much for member-states to ignore. The UNGA set aside 20 seats for NGOs who yearly competed among themselves to take up a seat for a year and have the same voting rights as nation-states. International politics is forever changed even though I doubt these networks can be as effective on other issues. The environment was tailor-made because the widespread commonality of interest in avoiding Armageddon. At another time or on a different issue, my guess is national, religious, ethnic, and class differences will resurface. But the achievement stands and the precedent set will make it hard for governments to ignore NGOs. Maybe they can even begin to partner.

Chapter 7

Power-Sharing in a Multipolar World

The United States will have greater impact on how the international system evolves over the next 15-20 years than any other international actor, but it will have less power in a multipolar world than it has enjoyed for many decades. Owing to the relative decline of its economic, and to a lesser extent, military power, the US will no longer have the same flexibility in choosing among as many policy options. We believe that US interest and willingness to play a leadership role also may be more constrained as the economic, military, and opportunity costs of being the world's leader are reassessed by American voters. Economic and opportunity costs in particular may cause the US public to favor new tradeoffs.

Developments in the rest of the world, including internal developments in a number of key states—particularly China and Russia—are also likely to be crucial determinants of US policy. A world of relatively few conflicts with other major powers would smooth the way toward development of a multipolar system in which the US is "first" among equals. In the end, events will shape the parameters of US foreign policy. Contingencies—such as the use of nuclear weapons or WMD terrorism—could convulse the entire international system and refocus the US role.

Demand for US Leadership Likely to Remain Strong, Capacities will Shrink

Despite the rise in anti-Americanism over the past decade, the US is still likely to continue to be seen as a much-needed regional balancer in the Middle East and in Asia. A recent survey (see box on pages 95-96) indicates growing unease with China's rise among its neighbors and, in many regions, a leveling off of antagonism, if not some improvement in attitudes toward the United States. In addition to its increasing economic power, China's military modernization program is a growing source of concern to its neighbors. The level of concern may rise even if Asia's security improves, for example, with a PRC-Taiwan accommodation, though in such an eventuality the opposite reaction is also possible. In the Middle East, a nuclear Iran would increase pressure for extension of a US security umbrella to Israel and other states.

"Developments in the rest of the world…particularly [in] China and Russia—are also likely to be crucial determinants of US policy."

Other states will continue to seek US leadership on the newer "security" issues, such as climate change. For example, many countries view US leadership as critical to encouraging major developing countries like China and India that are emitters of greenhouse gasses to take on serious commitments to reduce carbon emissions in a post-2012 emissions control regime. Most G-77 countries realize they are absorbing environmental harm from polluters and are not averse to the US intervening with Beijing.

Further, others will seek US leadership on countering WMD proliferation by taking steps to dissuade interest in WMD, strengthening nonproliferation regimes, preventing acquisition of WMD and associated expertise and technology, rolling back or eliminating WMD in countries of concern, fostering deterrence in the use of WMD, and mitigating the consequences of WMD use.

New Relationships and Recalibrated Old Partnerships

An increasingly multipolar world suggests a greater number of actors—including influential nonstate ones—with whom the US and other powers will have to contend. Descent into a world in which mercantilism and resource nationalism become the overriding *modus operandi* for others

probably would narrow the number of US partners, increasing the risks of tensions, if not confrontation among the powers in such a zero-sum world. On the other hand, a world of continuing prosperity would enhance prospects for greater burden-sharing and steps towards revitalization of multilateralism and global institutions.

During the period out to 2025, China and India are likely to remain *status quo* powers focused on their own development, drawing benefits from the current system and not too eager for the US or others to seek radical changes to the international order until Beijing and New Delhi judge that they are in a better position to help set the new rules of the road.

Although the emerging powers will want to preserve ample leeway and autonomy to exert regional influence independent of the United States, their relationships with the US are likely to deepen if their plans for greater economic development remain on track. Economic collapse, especially in China's case, could lead to a nationalistic upsurge and increased tensions with foreign powers, including the United States.

Europe will face difficult domestic challenges that *could* constrain its ability to play a larger global role, especially in the security realm. A sense of increased threat—whether from terrorism or a resurgent Russia—could change the European calculus on the need for more defense spending and greater capacity for unified action. Growing interest in Maghreb and Middle East economic and social developments increases the potential for Europe to play a stabilizing role similar to what it accomplished with enlargement to the East. Japan, to keep pace with China, may increase its political and security role in the region. We expect other countries, such as Brazil, to assume more expansive regional roles and to increase their involvement on certain key global issues such as trade and climate change.

Current trends suggest Russia has a more immediate interest in directly challenging what it sees as a US-dominated international system than do other rising powers. A more diversified economy, development of an independent middle class, and reliance on foreign technological expertise and investment for development of its energy resources could change that trajectory, however. An earlier-than-anticipated move away from fossil fuels also could undercut Russia's recent resurgence.

In the Middle East, where the US is likely to remain the dominant external actor, current trends suggest a greater role for Asian states which are reinforcing their growing economic links with stronger political ties. Asian powers—in addition to European ones—could seek or be drawn into roles in any future international security effort in the Middle East. The role of NGOs will grow commensurate with the increase of humanitarian needs owing to climate change. In turn, the international community, including the US, will become more dependent on NGOs to shoulder the burden of humanitarian relief.

Less Financial Margin of Error

The dollar is vulnerable to a major financial crisis and the dollar's international role is likely to decline from that of the unparalleled "global reserve currency," to something of a first among equals in a basket of currencies by 2025. This could occur suddenly in the wake of a crisis, or gradually with global rebalancing. This decline will entail real tradeoffs and force new, difficult choices in the conduct of American foreign policy.

Anti-Americanism on the Wane?

America's reputation abroad has fluctuated over the decades—from the *Ugly American* of the 1950s to the widespread international protests over Vietnam in the 1960s and 1970s to anti-nuclear activism in Europe in the 1980s. Anti-Americanism has experienced an upsurge during this decade. Between 2002 and 2007, the US image became less favorable in 27 of 33 countries polled. Attitudes critical of the United States can be parsed into two basic categories:

- "Transitory criticism" fueled by disagreements with specific aspects of the United States that can change with time, such as its foreign policies.

- "Anti-Americanism" reflecting deep and undifferentiated antipathy toward most aspects of the United States.

To the extent that certain aspects of American life—for example, its political system, people, culture, S&T, education, and business practices—are seen abroad as admirable, perceptions of the United States will be complex, keeping views flexible and open to revision. The downward trajectory of America's reputation suggested above may have bottomed out. Polling in 2008 by Pew's Global Attitudes Project found US favorability ratings up in 10 of the 21 countries for which trend data are available. Looking ahead, what regional drivers and dynamics might be pivotal for encouraging such a turnaround?

Europe/Eurasia. In contrast to regions more uniformly pro- or anti-American, Europe/Eurasia tends to hold more volatile views of the US. The views of Western Europeans appear to be buoyed to the extent that the United States, its key allies, NATO, and the EU deepen practical multilateral approaches to international problems. The views of Central and East Europeans, who are traditionally favorable toward the United States, probably will recede over time to the West European norm. No single set of US actions will reassure all states of the former Soviet Union, but avoiding a heavy movement of military assets into Moscow's perceived Near Abroad would stave off the tensest of relations with Russia.

Near East/South Asia. Societies most hostile to the United States are found in the Islamic Middle East, as well as Pakistan and North Africa. India is an important exception. Drivers for turning around the US image include a strong commitment to significant progress on Israel/Palestine, disentangling anti-terrorism from a perceived war on Islam, and seeking to provide aid to needy citizens in addition to military-security elites. To the extent Iran is perceived to be a dangerous revisionist power, people and states in the region will tend to view US military capability positively.

Sub-Saharan Africa. Africa continues to harbor goodwill toward the United States. Publics in Sub-Saharan Africa tend to find American lifestyles and standards of living enviable. If AFRICOM, the new US military command, does not present an overly militarized face to citizens in African countries, and humanitarian and economic developmental aid continues, the surveys suggest African opinion about the United States will remain favorable.

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East/Southeast Asia: Views of the United States in this region are relatively positive. Despite China's economic growth, and nascent Asian integration, US "soft power" still eclipses China's. The United States will continue to be looked to as a reliable security partner in Northeast Asia, and to a lesser extent in Southeast Asia. Public perceptions are at risk of downward swings in China, depending on portrayals of the United States in the country's official media.

Latin America: On balance, views of the United States are fairly favorable and stable, much more so in Central America, but less so in the Andean region. Some level of migration to the United States for jobs and subsequent remittance of earnings back to Latin America will be a key. Also important will be the degree to which US and Latin interests are viewed as shared, especially on multilateral tasks such as interdicting illegal drug supplies and combating organized crime and gangs.

Aggregating across regions, what does the tally sheet of factors affecting anti-Americanism look like out to 2025? First, factors favorable to the United States:

- Many state leaders and publics are distrustful of vast ***power*** itself, independent of the owner. As China becomes more powerful, some wariness will be displaced onto Beijing, and the United States' own function as a counterweight will become more appreciated.

- The US is benefiting from a likely turn in the ***battle of ideas***. First, and foremost, support for terrorism has declined dramatically over the last few years in many Muslim countries. Fewer Muslims now consider suicide bombing justifiable, and confidence in Usama Bin Ladin has waned.

- As big emerging markets in Asia and elsewhere grow, ***globalization*** will less often be equated with *Americanization*. As traditional ways of life are upset around the globe, unwanted foreign ideas and customs will appear more the product of modernity than of American sprawl.

Potentially unfavorable would be perceived slowness in tackling pressing transnational problems such as global climate change, food security, and energy security. A currently indeterminate factor will be the effect of increasingly pervasive mobile telephony, Internet connectivity, and direct satellite media on how individuals around the world receive their images of the United States. On balance, however, major trends suggest that anti-Americanism is declining.

- The dollar's global reserve status confers privileges on the US including insulation from risk of currency shocks, which enables lower interest rates, while a steady source of outside demand for US dollars affords the US a unique ability to run large fiscal account deficits without reproach from the global economy.

Enjoyed by the US for more than 60 years, these privileges have perhaps so permeated US thinking as to go unnoticed. While total loss of reserve status is unlikely, the dollar's decline may force the US into difficult tradeoffs between achieving ambitious foreign policy goals and the high domestic costs of supporting those objectives. In the face of higher interest rates, higher taxes, and potential oil shocks, the US public would have to weigh the economic consequences of taking strong military action, for example. The impact on others desirous of a stronger US role could be equally great if the US would decline or be unwilling to take action. In addition, US financial dependence on external powers for fiscal stability may curtail US freedom of action in unanticipated ways.

More Limited Military Superiority

In 2025, the US will still retain unique military capabilities, especially its ability to project military power globally, that other nations will continue to envy and rely on to secure a safer world. The United States' ability to protect the "global commons" and ensure the free flow of energy could gain greater prominence as concerns over energy security grow. The US also will continue to be viewed as the security partner of choice by many states confronted with the rise of potential hostile nuclear powers. Although the emergence of new nuclear-weapon states may constrain US freedom of action, US military superiority in both conventional and nuclear weapons and missile defense capabilities will be a critical element in deterring openly aggressive behavior on the part of any new nuclear states. The US will also be expected to play a significant role in using its military power to counter global terrorism.

"Anticipated developments in the security environment leading to 2025 may raise questions about traditional US advantages in conventional military power."

However, potential US adversaries will continue to try to level the playing field by pursuing asymmetrical strategies designed to exploit perceived US military and political vulnerabilities. In the future, advanced states might engage in counterspace strikes, network attacks, and information warfare to disrupt US military operations on the eve of a conflict. Cyber and sabotage attacks on critical US economic, energy, and transportation infrastructures might be viewed by some adversaries as a way to circumvent US strengths on the battlefield and attack directly US interests at home. In addition, the continued proliferation of long-range missile systems, anti-access capabilities, and nuclear weapons and other forms of WMD might be perceived by potential adversaries and US allies alike as increasingly constraining US freedom of action in time of crisis despite US conventional military superiority.

- Traditional US allies, particularly Israel and Japan, could come to feel less secure in 2025 than they do today as a result of emerging unfavorable demographic trends within their respective countries, resource scarcities, and more intensive military competitions in the Middle East and East Asia, especially if there is also doubt about the vitality of US security guarantees.

Surprises and Unintended Consequences

As we have made clear throughout this volume, the next 15-20 years contain more contingencies than certainties. All actors—not just the United States—will be affected by unforeseen "shocks." For various reasons the US appears better able than most to absorb those shocks, but US fortunes also ride on the strength and resiliency of the entire international system, which we judge to be more fragile and less prepared for the implications of obvious trends like energy security, climate change, and increased conflict, let alone surprises.

While, by their nature, surprises are not easily anticipated, we have tried through the scenarios to lay out possible alternative futures and each is suggestive of possible changes in the US role.

A World Without the West. In this scenario the US withdraws and its role is diminished. In dealing with unstable parts of the world in its neighborhood like Afghanistan, China, and India, the Central Asians must form or bolster other partnerships—in this case the Shanghai Cooperation Organization. The fragmentation and breakdown of the global order into regional and other blocs—while not on the scale of US-Soviet bipolar split—probably would usher in an era of slower economic growth and globalization, less effective action on transnational issues like climate change and energy security, and the potential for increased political instability.

October Surprise. The lack of effective management of the tradeoffs among globalization, economic growth, and environmental damage is shared widely among more players than the US. Implicit in the scenario is the need for better US leadership and stronger multilateral institutions if the world is to avoid even more devastating crises. The results of miscalculation on the part of others—such as the Chinese—have significant political costs, which probably would make it more difficult for the US and others to put together a plan for more sustainable economic development, including conflicts among the major powers.

BRICs' Bust-Up. In this scenario, growing great power rivalries and increasing energy insecurity lead to a military confrontation between India and China. The US is perceived by Beijing as favoring India to China's detriment. Great power war is averted, but the protagonists must rely on a third party—in this case Brazil—to help reconstitute the international fabric. Given the BRICs' disarray, the United States' power is greatly enhanced, but the international system is in for a bumpy ride as the military clash leads to internal upheavals increasing nationalist fervor.

Politics Is Not Always Local. On some issues, such as the environment, a seismic shift in government versus nonstate actor authorities has occurred. For the first time, a coalition of nonstate actors is seen by a large number of electorates as better representing "planetary" interests and, in this scenario, governments must heed their advice or face serious political costs. This may not always be the case since on other more traditional national security issues, national, ethnic, class and other differences are likely to re-emerge, undercutting the clout of transnational political movements. The US, like other governments, must adapt to the changing political landscape.

Leadership Will Be Key

As we indicated at the beginning of the study, human actions are likely to be the crucial determinant of the outcomes. Historically, as we have pointed out, leaders and their ideas—positive and negative—were among the

biggest game-changers during the last century. Individually and collectively over the next 15-20 years, leaders are likely to be crucial to how developments turn out, particularly in terms of ensuring a more positive outcome. As we have emphasized, today's trends appear to be heading toward a potentially more fragmented and conflicted world over the next 15-20 years, but bad outcomes are not inevitable. International leadership and cooperation will be necessary to solve the global challenges and to understand the complexities surrounding them. This study is meant as an aid in that process: by laying out some of the alternative possibilities we hope to help policymakers steer us toward positive solutions.